

BePA Report

"Benchmarking Prevention Activities"

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Report Prepared for:

New Zealand Search and Rescue (NZSAR)

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Executive Summary

Background

NZSAR provides strategic leadership to the New Zealand Search and Rescue Sector.

In June 2016 NZSAR commissioned a report titled: *Reducing SAR responses: A framework to achieve safer recreation in New Zealand*. This report is now more commonly referred to as the “Hight Report”, as it was completed by the company Hight: Strategy and Risk.

The Hight Report sought to examine the search and rescue (SAR) sector to consider how to achieve safer recreation in New Zealand specifically relating to SAR. It identified that **preparedness** and **prevention** are critical to the objective of achieving safer recreation in New Zealand.

The Hight report generated a framework, the *Recreational Safety Framework*, which focused on the objective of “safer recreation, reduced SAR”. This objective has been further refined by NZSAR to: *better SAR outcomes*.

Better SAR outcomes are identified as being either: a reduction in SAR (related to participation rates), as well as less serious SAR outcomes – i.e. a decline in Category I incidents (the most serious incidents which are responded to by NZ Police).

The Hight Report made several recommendations to the sector. One of these recommendations was to undertake an annual recreational safety report. This report has been further defined as a sector-wide benchmarking report, with a focus on prevention and preparedness initiatives as they relate to recreational activity, to achieve better SAR outcomes. This BePA Report presents the findings of this activity.

Our approach

18 stakeholder organisations were identified by NZSAR for engagement, ranging from delivery organisations to support and funding organisations. Key persons from within these organisations were interviewed as part of this process and existing literature was reviewed to establish a clear understanding of the current situation and existing measurements that exist in the SAR sector and their suitability for the purposes of benchmarking.

What we found

To produce a quality benchmarking report, we needed to establish if there was appropriate data available, and indeed, what that data indicated.

What we found was a highly engaged sector consisting of organisations and collaborative groups who were all, to some degree, undertaking measurement activities.

However, upon deeper analysis of all the data available from the sector, we found the following challenges:

- **Situational measurement:** Much of the measurement undertaken in the sector is relevant to an individual organisation's situation or campaign. While some is applicable to SAR outcomes, not all are.
- **Combined information:** It is often challenging to separate out the impact of individual activities which are part of a wider programme.
- **Different objectives:** The sector is collecting different data at different times and therefore this is not easily translated into an all-of-sector framework.
- **Data gaps:** the measurement undertaken by some organisations may not be directly relevant to NZSAR's objective.

Application of the Hight framework to benchmarking

The Hight framework defined five "Root Causes" and types of "Control Measures" as a way to consider relevant initiatives. As we sought to apply the Hight framework to the information in the benchmarking process, we found that the classifications were reasonably high level, and as such, required further detail to facilitate effective benchmarking across the entire sector.

HenleyHutchings has been able to develop a more detailed model to classify initiatives. This model sits within the Hight framework, to facilitate effective measurement across the sector. This approach has been titled the "BePA Model" – BePA standing for **Benchmarking Prevention Activities** – and has been detailed within this report.

The go-forward

Quality benchmarking requires the availability of further detail than what is either currently available or was provided to HenleyHutchings for this report.

Whilst this report includes some findings which could in future be more accurately benchmarked, we are cautious to use these to develop benchmarks until we have filled all of the information gaps.

We recommend that an activity is undertaken to gather more specific information related to SAR outcomes and that this be used to develop a more comprehensive benchmarking system than is possible at this stage.

The opportunities for the sector are more far-reaching than simply providing a 'score card' or performance every few years – they will provide opportunities to identify areas for improvement across the sector over time.

Section One: Background

Introduction

The New Zealand Search and Rescue (NZSAR) Council provides strategic leadership to the New Zealand Search and Rescue Sector. Search and rescue is an integrated component of New Zealand's wider emergency management framework.

Purpose of this report

This report is one of a series of reports being generated by NZSAR. The over-arching goal of these reports is to assist NZSAR's strategic focus on the sector through the collation of information.

The Council's 2017-20 Strategic Plan states:

- A large number of organisations with a role to play within SAR prevention.
- Collectively, the sector will enhance personal responsibility through information, education, regulation, investigation and enforcement.
- NZSAR will collaborate with, inform and contribute to partner organisations.
- When required, NZSAR will enable, coordinate or lead public-focused SAR preventative strategies and actions to reduce the number and/or the severity of SAR incidents

The NZSAR secretariat told us in the compilation of this report that they wanted to:

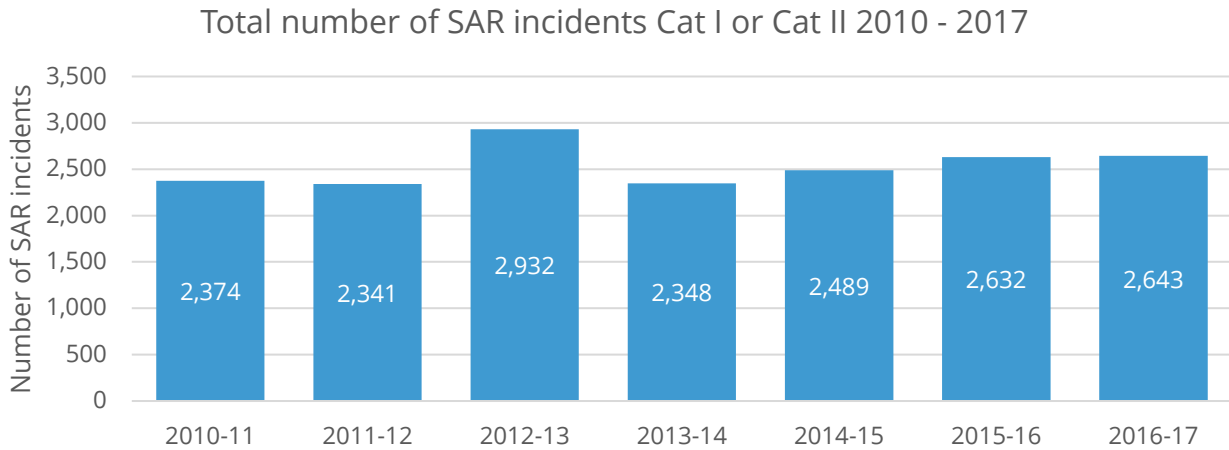
- Enable a *greater collective understanding* of the prevention and preparedness activities underway across New Zealand.
- *Add to existing research* on recreator's behaviour.
- List and define the *role played* by different SAR prevention and preparedness organisations (whether that be information / analysis, education, regulation, advocacy, enablement, leadership, coordination, post event investigation and/or enforcement).
- Define and assess the scale and scope of existing *collaborative arrangements* and assess how this is contributing, or not, to effective SAR prevention and participant preparedness.
- Respond to the Hight report's (see details below) suggestion that *'too much emphasis on response [in the search and rescue sector] may overlook opportunities for complementary activities that promote awareness of the risks and the value of personal preparedness.'*
- Highlight *key risk areas* requiring on-going focus.
- *Showcase* existing, good industry practices.
- Consider available evidence about the causes of incidents and better *understand and improve the nexus between* current preventative and preparedness activity and the causes of these incidents.
- Prepare a report on the above, as a *'strategic and practical tool.'*
- *Stimulate a conversation* amongst stakeholders about the importance of continuing to increase and refine investment in preparedness and prevention.

The purpose of this report is to progress parts of all of the approaches listed above. Another motivator for this report is whether a higher level of preparedness and more focus on risk-reduction through prevention can reduce the cost of SAR response and recovery services. If so, it would result in a 'virtuous-circle' redirection of these 'saved funds' into further prevention and preparedness endeavours.

The need for intervention

The NZSAR database shows that an average of 2,537 Cat (Category) I (Police response) or Cat II (Rescue Recovery Coordination Centre – RCCNZ – response) recreational search and rescue incidents occurred annually between 2010 – 2017. Police coordinated 69% of all SAR incidents and RCCNZ the remaining 31%.

Figure 1: Total number of SAR incidents Cat I or II 2010 - 2017



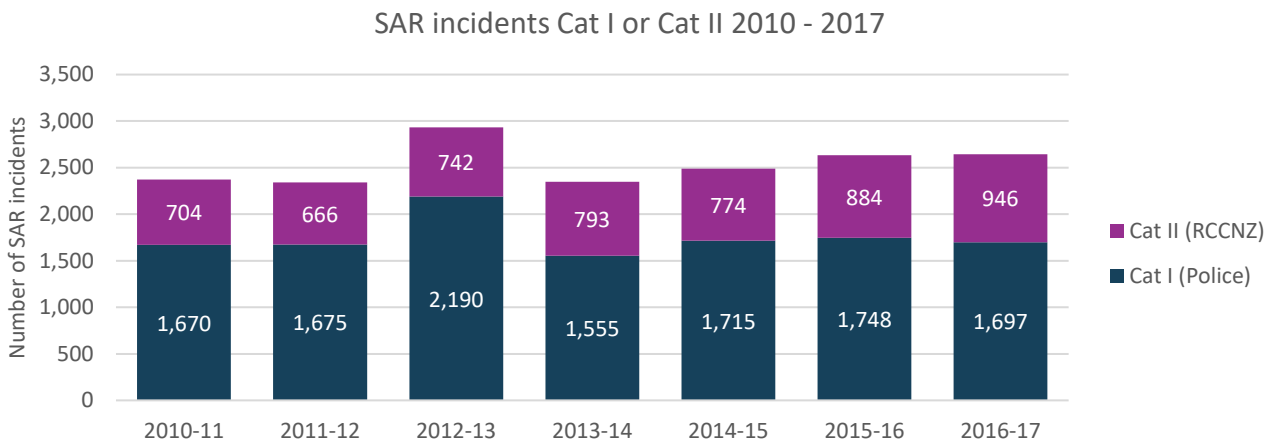
Source: NZSAR Annual Reports 2010 – 2017

Many thousands more recreational safety incidents happen each year that are not the subject of a Cat I or Cat II SAR response. The overall number of SAR incidents increased slightly between 2010 to 2017 from 2,374 Cat I or II incidents in 2010-11 and 2,643 in 2016-17.

In 2013-14 there was a spike in SAR incidents, which then declined in 2014-15 back to similar numbers from the 2011-12 period. However, the number of SAR incidents has increased year-on-year since 2013-14 until 2016-17. Whether this increase is an increase as a proportion of people participating in recreational activities is not known. The holiday period December to April is the busiest period for incidents with January the peak month.

There has been an overall increase of SAR incidents year-on-year since 2013-14

Figure 2: SAR incidents Cat I or Cat II 2010 – 2017



Source: NZSAR Annual Reports 2010 - 2017

The overall number of incidents on land has increased from 967 to 1271 in 2016-17. The overall number of incidents at sea has incrementally decreased from 1,076 incidents in 2010-11 to 999 in the same period.

Investment in SAR

The results of the SAR sector response in 2016/17 were 160 lives saved, 670 people rescued, and 927 people assisted (NZSAR Annual Report 2016-17).

SAR was also involved in 167 death incidents; 57% of them were suicide or body recovery activations. Twenty were accidental land-based fatalities. Thirty were accidental drownings. 13% were international visitors.

NZSAR's 2016/17 annual report estimated New Zealand averted \$597 million in social costs because of the 160 lives saved through SAR responses. This was at a cost of \$21.2m in Government investment plus a large but unaccounted for amount of additional investment by the SAR agencies themselves, and by their sponsors and volunteers.

Figure 3: SAR response impact 2016-17



Source: NZSAR Annual Report 2016-17

Defining 'prevention'

NZSAR define their SAR prevention vision in the following terms:

'...we seek an informed, responsible, adequately equipped and appropriately skilled public who are able to either avoid distress situations or survive them should they occur...collectively (SAR organisations) will enhance personal responsibility through information, education, regulation, investigation and enforcement (and) collaborate, inform and contribute to partner organisations and when required, enable, coordinate or lead public focussed SAR preventative strategies and actions in order to reduce the number and/or the severity of SAR incidents within the NZ Search and Rescue Response'.

We also note that prevention in this instance also includes preparedness initiatives or actions, because:

- **Prevention** may be viewed as the use of effective and constructive assistance and hindrance measures, information, obstacles or impediments to stop or limit an unwanted event or behaviour occurring.
- **Preparedness** may be viewed as the adoption of 'readiness,' that is, thoughts and actions enabling risks to be appropriately managed. Preparedness may be achieved by participating individuals having an appropriate skill level, knowledge or state of mind to avoid risks escalating to a point where unwanted incidents occur.

Both prevention and preparedness are relevant to this exercise.

Defining the scope of initiatives and activities

Not all preparedness and prevention related-initiatives are within the scope of this exercise. In scope for NZSAR are those which have an immediate impact on the objective of better SAR outcomes. For example, teaching children to swim is a very important safety initiative that is likely to prevent drowning, should the skill be required. Furthermore, it is acknowledged that a SAR response may be required to assist a drowning person. *However*, in the same way that a programme teaching people how to safely ride a mountain bike is unlikely to be classified as having an immediate (direct and timely) impact on the need for SAR, these types of training initiatives that focus on the skills needed to partake in an activity have been deemed out of scope for NZSAR's benchmarking exercise, however, initiatives relating to training are still very important and should continue to be measured by relevant organisations.

Related, in-scope initiatives would be the 'swim between the flags' initiative which directly outlines where is safest to swim (the impact of which can be measured against similar beaches without the flags

initiative in place, relating to the seriousness of SAR outcomes on beaches with and without), or engineering improvements to a mountain bike track that has been identified as having a high injury rate because of the terrain.

About the sector

NZSAR are a funder of some prevention and preparedness initiatives carried out by member agencies. They are also involved in sector 'insight' data gathering and interpretation. NZSAR are also the major player behind the AdventureSmart website (see further comment later) but are perhaps best known for their SAR system responsibilities.












Four other agencies may be viewed as 'overview' players in the prevention and preparedness space. The first is Water Safety NZ. The second is the Mountain Safety Council. The third is Maritime New Zealand. The fourth is DOC:







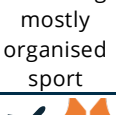



- The **Mountain Safety Council** (MSC) is a national organisation which has been working for more than 50 years with a mandate to encourage safe participation in land-based outdoor activities. They do this primarily through the development and promotion of safety messaging, by identifying and responding to insights provided by the ongoing collection and analysis of data, and by building partnerships with relevant organisations.
- **Water Safety NZ** educates, empowers and supports people, throughout their life stages, to safely have experiences in, on or around water, to the best of their knowledge, skills and ability. Water in this sense includes the sea, swimming pools, rivers, lakes and even – in the case of the very young - the home bath. Water Safety NZ are the leadership body to advocate for, represent and support the water safety sector. They do not deliver programmes in a hands-on way. Rather, they provide funds to water safety delivery programme partners. They undertake 'insight' research to better understand how best to tailor these water safety interventions. They also lead highly-effective campaigns to promote water safety awareness (more details about these programmes are provided later).
- **Maritime New Zealand** (Maritime NZ): in relation to search and rescue functions, Maritime NZ provides overview and coordinates organisations with prevention and preparedness responsibilities covering commercial and recreational vessels on coastal and inland waterways and operates the Rescue Coordination Centre NZ, including the distress beacons system, the Distress and Safety Communications network (maritime radio) and coastal aids to navigation network.
- **Department of Conservation** (DOC): is increasingly recognising the overview role they may play in providing messaging and undertaking research to prevent accidents and search and rescue on public conservation land alongside the work they undertake in-situ such as track maintenance, improvement and warning signage.

Influence and focus of SAR organisations in New Zealand

The Hight report classified SAR organisations into four categories: Air, On-water, In-water and Land recreation. We have used these same descriptors throughout this report. There are also "other" important SAR-related agencies, which we have classified as "Support organisations" in the following table, which provides information about the prevention and preparedness responsibilities of organisations interviewed as part of the development of this report.

Table 1: Interviewees and their Organisation's Influence and Focus

Agency	Persons interviewed	Domain of influence	Prevention / preparedness – primary tools of influence
air			
CAA	Steve Kern	 Air	Advocacy and regulation of powered craft
On-water recreation			
Coastguard NZ	Patrick Holmes	 Coast	Training, certification, advocacy, information provision and rescue response
TLAs - Harbour Masters	Grant Nalder	 Coast and harbours	Regulation and advocacy
Maritime NZ	Lindsay Sturt, Vince Cholewa and Matt Wood	 NZ's inland and coastal waters, and ocean	Regulatory compliance, incident SAR response / coordination, evidence gathering / interpretation, education, seafarer certification, campaigns, agency coordination and advocacy managing New Zealand's distress beacon system, the Distress and Safety Communications network (maritime radio) and aids to navigation
In-water recreation			
Drowning Prevention Auckland (Watersafe)	Davin Bray	 Water – at all locations	Training, advocacy and research
Surf Life Saving New Zealand	Paul Dalton and Allan Mundy	 Coast and foreshore	Education, awareness, advocacy and rescue response
Water Safety NZ	Jonty Mills and Neil McInnes	 Water – at all locations	Insight / research, funder of skills development programmes, advocacy
Land recreation			
DOC	Don Bogie	 Public conservation land	Safe infrastructure systems. Information provision for visitors reflecting principles, policy, processes, best practice guidance tools, management and responding to risk events.
LandSAR	Pat Waite	 Land-based outdoor recreation	Mostly rescue response
Mountain Safety Council	Mike Daisley and Nathan Watson	 Land-based outdoor recreation	Insight / research, partnerships, information provision and advocacy
Territorial Local Authorities (TLAs)		 Land-based outdoor recreation and parks	Regulation and advocacy

Maritime NZ	Lindsay Sturt, Vince Cholewa, Baz Kirk, Pania Shingleton, Mike Hill, Matt Wood and Tere Scotney	 Land-based use of beacons	Manage New Zealand's beacons distress system, the Distress and Safety Communications network (maritime radio and aids to navigation), incident SAR response / coordination
Support organisations			
ACC	Kirsten Malpass	 All domains	Funding to third parties – mostly organised sporting organisations for injury and death reduction programmes
DIA Lotteries Grant Board	Joe Grace; Kay Johnson, Scott Nielson	 All domains	Funder of programmes
MetService	Peter Kraft	 All domains	Information provision and research
NZ Police	Jo Holden	 All domains	Regulation and rescue response
NZ Recreation Association	Andrew Leslie	 Organisations delivering mostly organised sport	Facilitation of information exchange, policy and standards development
NZSAR	Duncan Ferner, Carl Van Der Meulen, Rachel Roberts	 All domains	Information, strategy leadership and activities
Sport NZ	Colin Stone	 All domains	Organised sport
Tourism Industry Aotearoa	Chris Roberts	 All domains	Advocacy and information
Tourism NZ	Paul Yeo	 All domains	Advocacy

Details about the eighteen organisations who participated in the development of this report are provided in Appendix One.

Section Two: Approach

A sector-wide benchmarking model

The influence of the Hight Recreational Safety Framework

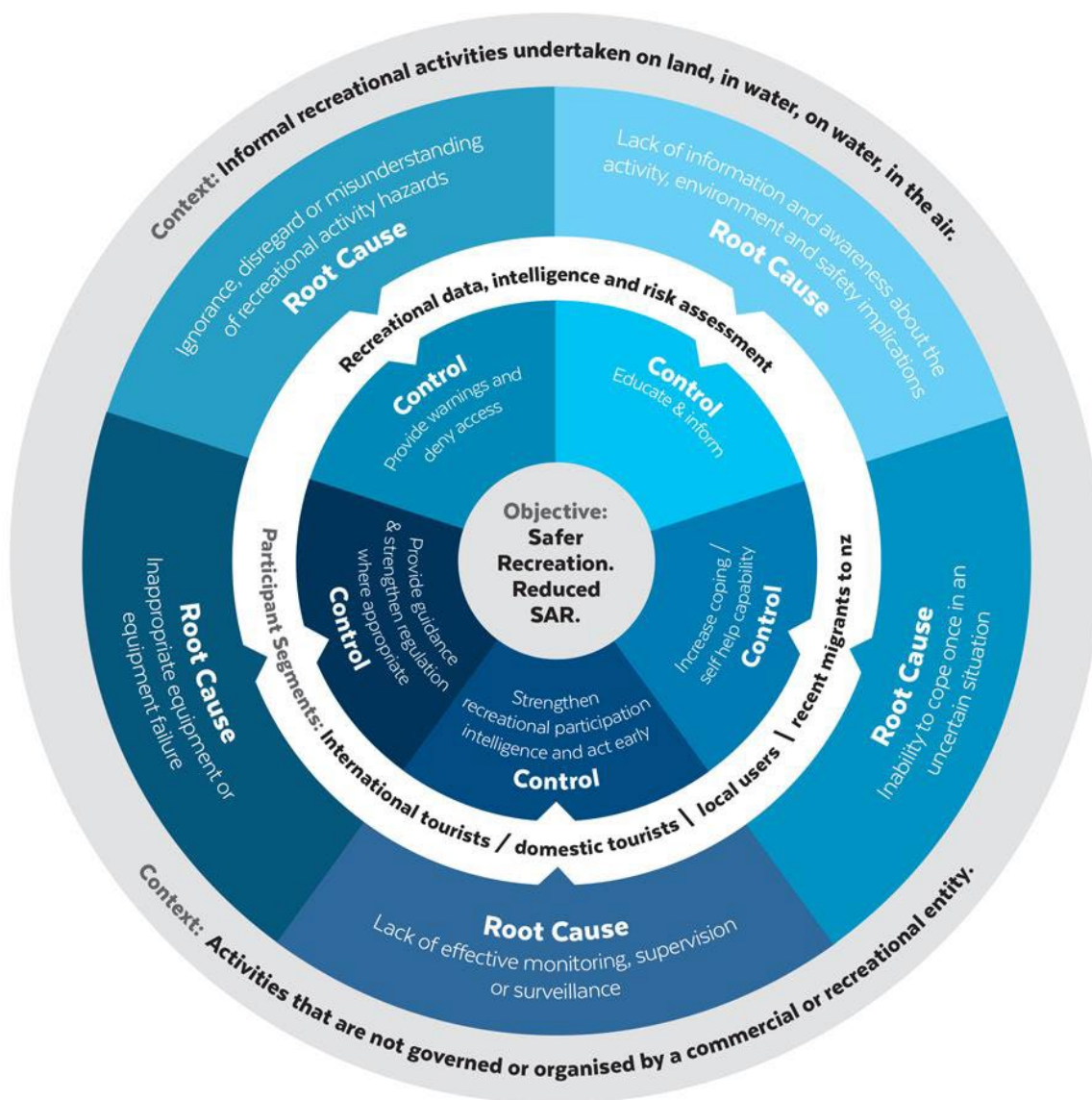
As noted in the Executive Summary, the Hight Report was commissioned in 2016 to consider how to achieve safer recreation in New Zealand specifically relating to SAR.

The report generated a framework, the Recreational Safety Framework, which focused on the objective of “safer recreation, reduced SAR”. (This objective has been further refined by NZSAR to: better SAR outcomes.)

The basis and logic for Hight’s ‘focus on reduction’ recommendation was captured in this recreational safety framework (see Figure 4: Recreational Safety Framework).

Figure 4: Recreational Safety Framework

(next page)



Source: Reducing SAR responses: A framework to achieve safer recreation in New Zealand

This framework defines the root causes, markets (international tourists, domestic tourists, local users and recent migrants to New Zealand) and remedies ('controls') to create safer recreation and fewer SAR response activations.

The **location** of the most **popular active recreational activities**, are:

- For New Zealanders, it is swimming at a beach (69%), walking hiking or tramping for longer than 3 hours (43%) and boating (42% - see <https://www.maritimenz.govt.nz/recreational/safety-campaigns/documents/Recreational-boating-participation-research-2017.pdf>).
- For international tourists, it is boating (76%), walking, hiking or tramping longer than 3 hours (47%) and undertaking canoe, kayak, dinghy trips (41%).

The **'causal' factors** identified within the Hight framework are:

- Ignorance, disregard or misunderstanding of recreational activity hazards.
- Lack of information and awareness about the activity, environment and safety implications.
- Inability to cope once in an uncertain situation or when exposed to recreational hazards.
- Lack of effective monitoring, supervision or surveillance while exposed to recreational activity hazards.
- Inappropriate equipment selection or equipment failure.

The **control measures**, as identified by Hight, would be to:

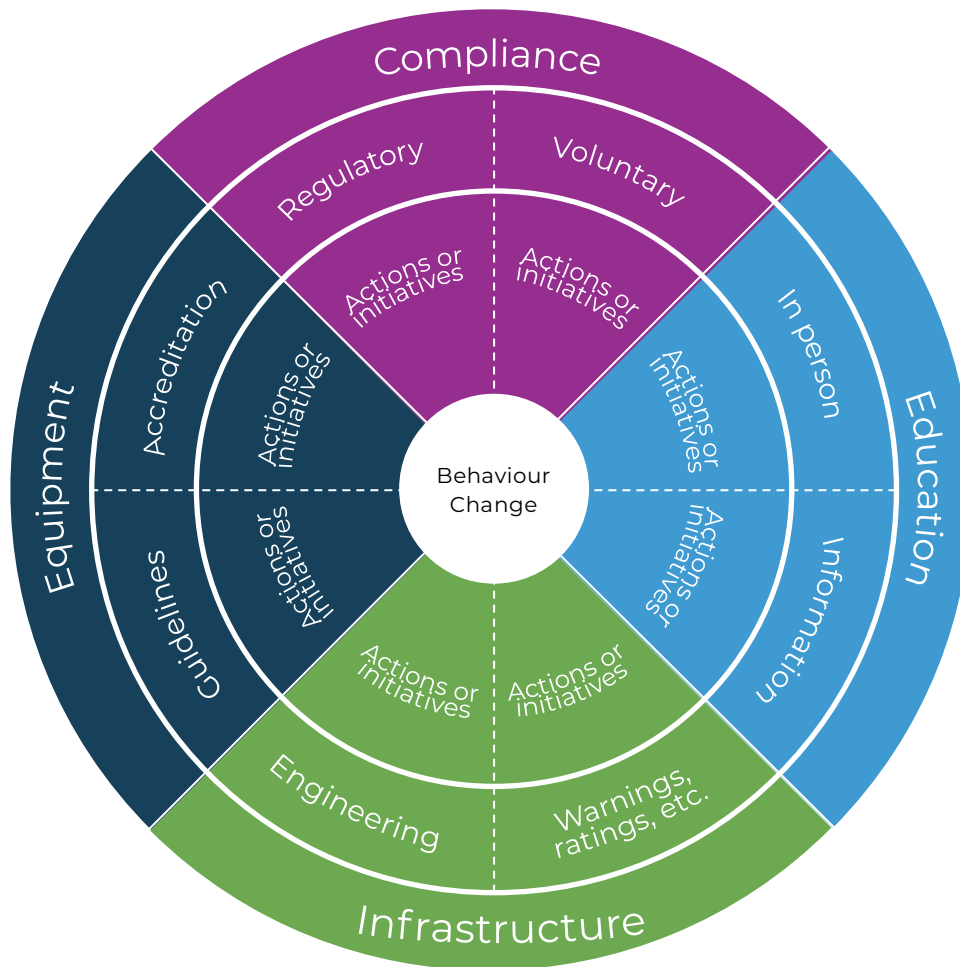
- Provide adequate hazard warnings.
- Educate and inform participants about the need for them to be aware of the limits of their recreation capabilities.
- Increase coping self/help capability.
- Strengthen the provision of recreation participation intelligence e.g. weather warnings.
- Provide guidance and regulations to control the use of inappropriate equipment.

We believe the framework is sound but doesn't go far enough in evaluating the effectiveness of each type of intervention.

Application of the Hight framework to benchmarking

HenleyHutchings proposes a model for benchmarking initiatives and actions that sits within the Hight framework. In essence this model drills deeper into the Recreational Safety Framework for the purposes of benchmarking (see Figure 5, over page):

Figure 5: the BePA Model



The diagram above identifies four initiative/action classification ‘quadrants’:

Compliance, Education, Equipment and Infrastructure.

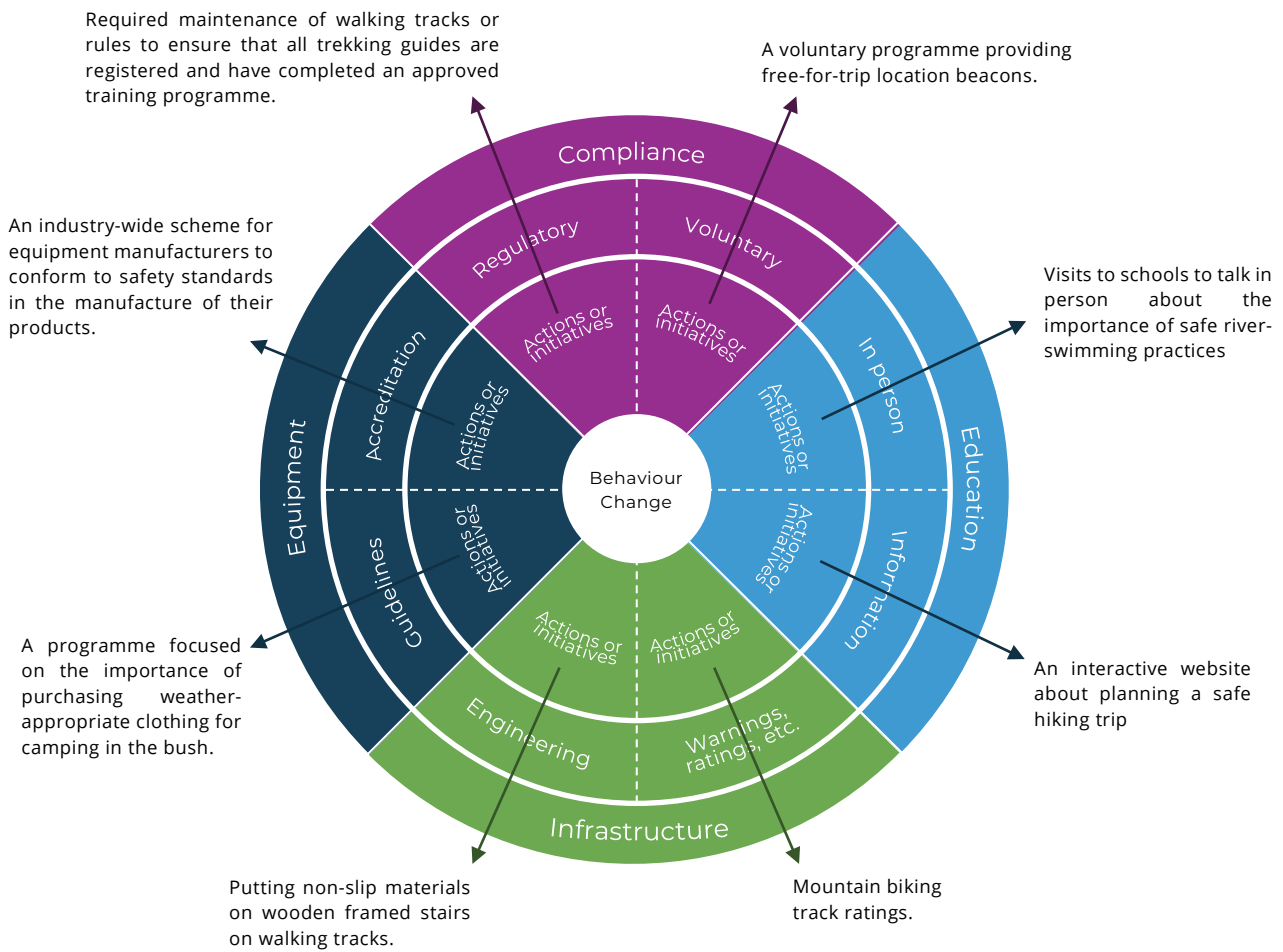
Within these four quadrants, are two distinctly different ‘types’ of activities or initiatives. The goal at the “bullseye” is behaviour change. This is because behaviour change is the key to achieving better SAR outcomes.

It is HenleyHutchings’ experience that this approach is highly successful for classification of initiatives when undertaking benchmarking because its ability to:

- Compare different initiatives using a consistent and equal frame
- Facilitate high-level analysis as well as understanding individual organisations’ activities
- Segment initiatives and actions into types of interventions
- Compare the effectiveness of the types of interventions on behaviour change based on data from other sectors’ experiences.

For the SAR sector, each organisation would map its initiatives across the quadrants illustrating the breadth (or narrowness) of their initiatives and where there might be gaps. Dollars spent could also be included to identify into which quadrants money is being invested.

For example:



The model could also be overlaid by segmenting organisational focus across:

- Air
- On water
- In the water
- Land

to clearly demonstrate where each organisation focuses its initiatives. This would be especially helpful in identifying gaps.

Key benefits of the framework

1. **Ability to consider impact over time:** the report could analyse the impact of the findings year-on-year individually and cumulatively.
2. **Opportunity to use multi quadrant strategies:** multiple 'hits' may be more effective than the sum of individual 'hits'
3. **Use of information to map 'desired' future state:** Organisations could use the framework to map "where you are now" as well as "where you would like to be".

4. **Ability to compare with SARdonyx¹ data:** this data provides activity participation rates and assessment of preparedness.

Identifying initiatives and actions

The most logical way to identify initiatives and actions is to request each SAR organisation to complete a survey which provides the following:

- A clear definition of what 'is' and 'isn't' in scope
- An explanation of what prevention and preparedness initiatives and actions are within the context of the benchmarking activity
- Questions which assist the organisation to clearly provide relevant information such as the objective/s of the initiative, the budget and resourcing requirements and timeline. Importantly, this would also assist them to provide information required to classify the initiatives/actions into the BePA Model, as well as the required measures to be attributed back to the ability to benchmark behaviour change as it directly impacts on better SAR outcomes.

The survey would also assist them to explaining why the initiatives they have listed are relevant.

For example, an initiative referred to previously in this report was the swimming between the flags initiative. This is relevant to the defined scope and can be benchmarked against the objective of better SAR outcomes by measuring the SAR requirements at beaches of similar types with and without the flag programme – for example, are the flags having a measured difference on the severity of the SAR outcome (Cat I of Cat II) as well as the number of SAR call outs?

An example of a draft survey has been provided in Appendix Two.

Identifying the right 'mix'

Once the information is gathered and is deemed relevant, it can be used to identify the right 'mix' of initiatives, as mapped against the sector's delivery of initiatives and actions that have a demonstrable impact.

Gathering data within the sector at first is likely to be 'patchy' and map *likely* cause-and-effect indicators. However, over time, it will be possible to implement proper measuring tools that will facilitate the collation of 'better' data to provide more certain conclusions.

In the interim, it is recommended that sectors with similar goals, such as behaviour change, are considered against the BePA model, and they are asked about the effectiveness of their initiatives on behaviour change as they relate to the BePA model.

For example, road safety programmes within New Zealand have found that advertising has a level of effectiveness that is limited to specific audience types such as New Zealand road users, but that other measures are required to target at-risk road users who may be tourists and who may not be fluent in English or exposed to advertising on television. Therefore, there is a required 'mix' of initiative types needed to achieve the desired result of behaviour change. In this example, these road users benefit from infrastructure-related interventions, e.g. better roads, signage, and so on.

It is the combination of measures from different 'quadrants' which ensures effective outcomes. However, the cost to upgrade infrastructure can be significantly greater than an informational programme. These

¹ SARdonyx is a NZSAR project taking all Cat I and Cat II SAR data into a BI data store to query and display various data fields into order to make better decision.

benefits can be considered and then measured based on their funding requirement and their impact over time.

Similarly, we believe that the NZSAR sector would be able to identify patterns of effectiveness relating to better SAR outcomes by applying this consistent BePA Model to its initiatives and activities.

Principles identifying “success” in a benchmarking frame

The following principles guide criteria for success:

- **Value for money:** was there an effective use of budgeted funds?
- **Demonstrable results achieving intended purpose/s:** did the actions/initiatives have the desired result on positive SAR outcomes?
- **Relevance:** was the initiative/action within the scope of the sector organisation (necessary or ‘nice to have’?)
- **Collaboration:** was the initiative a collaboration with other appropriate SAR organisations? Could the approach or initiative be applicable to other SAR organisations and is there an opportunity for collaborative practice?
- **Mix:** is the mix appropriate for the outcomes desired?
- **Other positive impacts:** did the programme have other positive or unintended benefits?

Collating the information

Once this valuable data is collected, it is important that it is collated into a cohesive report which clearly demonstrates how sector activities are contributing to achieving better SAR outcomes.

HenleyHutchings proposes that a bi-annual benchmarking report, which would be a developed iteration of this BePA Report, and would include the following:

1. Strategic goals, principles, objective and outcomes
2. Clear definition of the scope of the report
3. Application of the BePA Model to three levels of analysis:
 - a. High-level: Across-sector data relating to all initiatives
 - b. Mid-level: Sector break-outs for air, land, in-water and on-water
 - c. Operational-level: information relating to each contributing SAR organisation
4. Findings relating to the principles to identification of success (listed above)
5. Next steps.

The core purpose of this report would be to collate and present the findings of the benchmarking activity in an all-of-industry frame.

Section Three: Information and Findings

Relevant initiatives

Each interviewee was asked to provide HenleyHutchings with an understanding of their initiatives and actions as they related to prevention and preparedness, and what they perceived their role to be within this frame. They were asked to provide funding information, where available. The information provided by each organisation has been noted in Appendix One. Furthermore, we have provided our own interpretation of the information and generated preliminary impressions at an organisational level.

We also invited each of our interviewees to nominate their “best” example of good practice prevention and preparedness initiatives/actions. The purpose of doing this was not just to give the agencies responsible for these initiatives the accolade they deserve, but also to better understand and thereby replicate the factors contributing to them being selected. The examples put forward by our interviewees were wide-ranging. They were:

Air

- (No current initiatives)

On-water:

- Supporting local authorities and other regionally based organisations to deliver regional recreational boating safety programmes to boat users
- Applications such as Coastguard, Marine Mate and the Metservice
- ‘Virtual Coastwatch’ geo-fenced safe boating messages provided to mobile devices within 15kms of the coast using Google and Facebook and other platforms
- Use of speed radar in the Marlborough Sounds as method of controlling the speed of recreational vessels using these waters
- The ‘no excuses’ on-water enforcement boating campaign run jointly by Maritime NZ and regional councils as part of a common compliance approach
- Safer Boating campaigns, including Safer Boating Week; Prep, Check, Know; and Nobody’s faster than disaster
- Old for new campaign to accelerate replacement of life jackets deemed not fit for further use
- The Safer Boating Forum’s annual Recreational Boating Participation Research lead by Maritime NZ
- The distress and safety maritime communications network

In-water:

- Surf Life Saving NZ’s protocol to help identify beach hazards, patrol beaches and undertake prevention activities
- ‘Swim Reaper’ for changing youth behavioural attitudes toward swimming and drowning
- ‘Don’t jump on your mate’ programme – with its focus on the at-risk behaviours of your men
- Integrated data approach applied by WSNZ as an evidence-based predictor of the causes of drowning to enable focused intervention programmes
- ‘WSNZ use of an ‘investment prospectus’ built on risk and demographic profiles to help regional applicants in writing their applications for funds

Land:

- LandSAR are leading coordination of activities to promote the use of GPS location-finding pendants to help dementia-affected persons with its "Wander Search" programme
- Link on the MetService web site providing ease of access to partner websites containing advice about outdoor recreation safety
- The activity-risk-specific reports used by MSC to record 'insights and as background for the development of risk-specific You Tube videos of high quality, targeted toward at-risk groups
- The personalised approach adopted by employees of i-Sites in providing risk prevention and preparedness information to persons intending to undertake activities in the greater outdoors
- MSC in general for its drive to make all its intervention evidence based and data driven
- MSC is undertaking Project Celsius – crunching stats to determine the link between outdoor related incidents and weather.

Preliminary findings

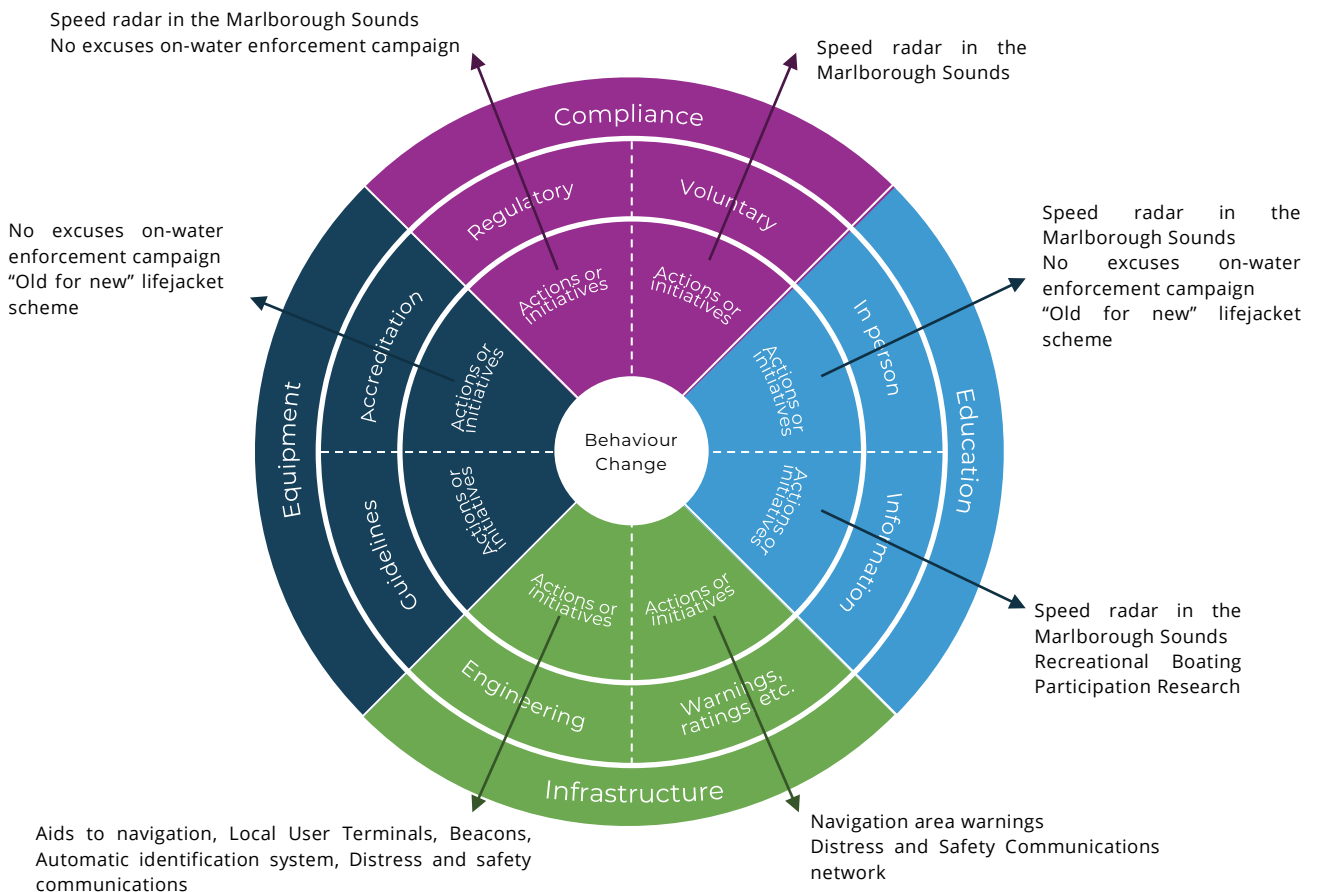
Analysis of the above initiatives has provided HenleyHutchings with the ability to present some preliminary findings, using the BePA approach.

Air:

(No findings to report)

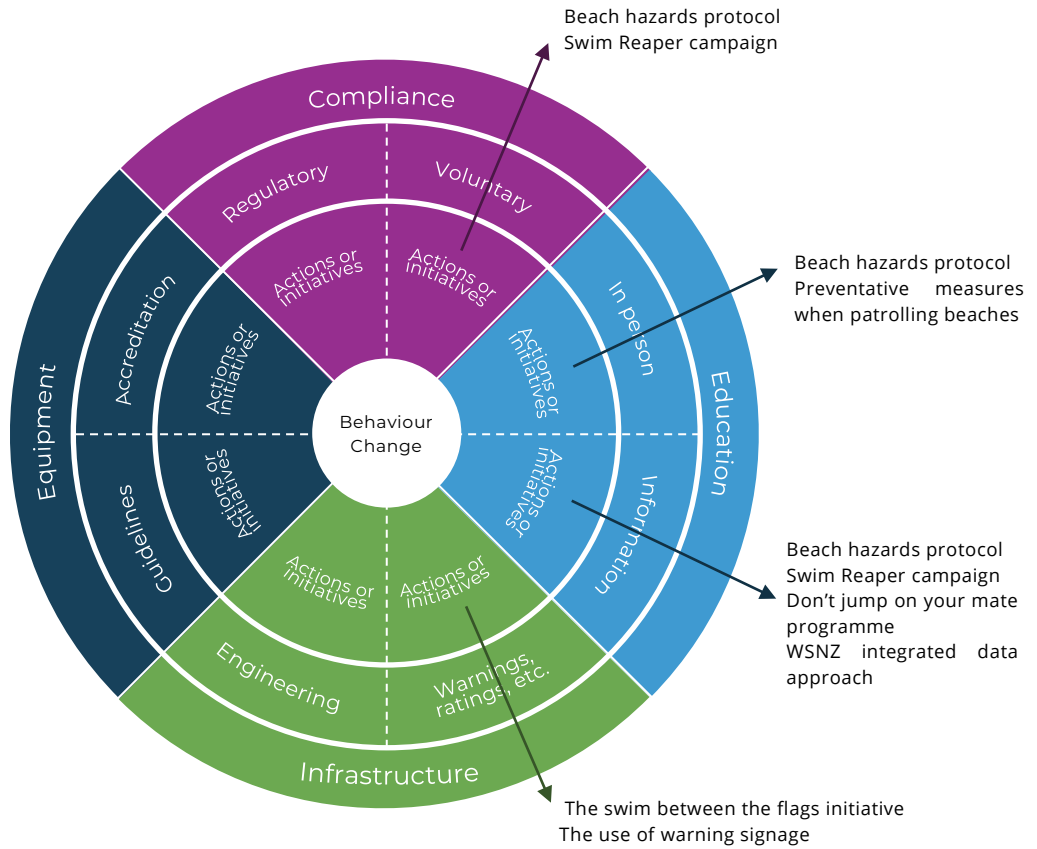
On-Water:

Sector Overview:



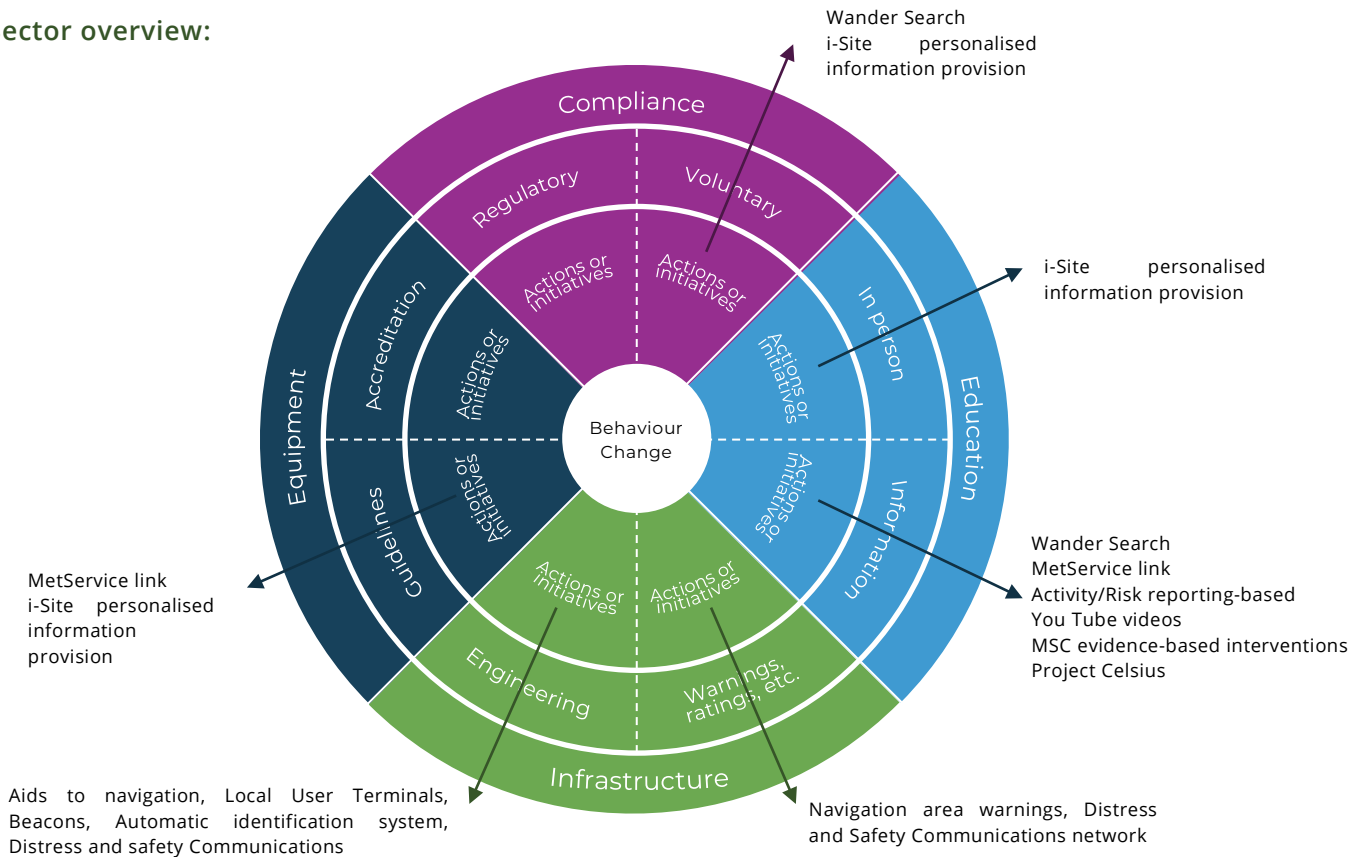
In-Water:

Sector overview:



Land:

Sector overview:



Process-related findings

Data is available, but not all data is applicable

As noted in the Executive Summary, HenleyHutchings found that while organisations are investing in initiatives with prevention and preparedness focuses, and that some are measuring these, there are several challenges which have impacted the initial opportunity to provide a fulsome, quality benchmarking report, namely:

- **Situational measurement:** Much of the measurement undertaken in the sector is relevant to an individual organisation's situation or campaign. While some is applicable to SAR outcomes, not all are.
- **Combined information:** It is often challenging to separate out the impact of individual activities which are part of a wider programme.
- **Different objectives:** The sector is collecting different data at different times and therefore this is not easily translated into an all-of-sector framework.
- **Data gaps/data not relevant:** the measurement undertaken by some organisations may not be directly relevant to NZSAR's objective.

What we did find is an understanding of the importance of measurement, and a willingness to identify the types of measurement required for the purposes of better SAR outcomes.

For example, MSC, WSNZ and many other SAR organisations make extensive use of data to gain insights. They believe that by collecting and analysing new and existing data, they will:

- Understand where people go and what activities they do.
- Know who's most likely to get into problems.
- Identify the most hazardous places and activities.
- Target safety messages to the right groups.
- Share useful information with partners and others.

The MSC and WSNZ starting points were to achieve clarity about what needs fixing – defining the problem clearly and accurately. Sources of insight information include ACC, Coroner and NZRCC and the Police as well as the results compiled from custom-designed surveys.

WSNZ insight activities clearly display the following behaviours:

- Target research at agreed sector priorities.
- Use data and research to make evidence-based decisions and improve sector performance.
- Invest in campaigns which deliver measurable outcomes.
- Implement a cohesive sector approach.
- Support research for which the New Zealand Water Safety sector is recognised as the world leader in aquatic safety.

This is applicable to the requirements for benchmarking, however, it will require the approach outlined in Section Two, to clearly gather the relevant information from SAR organisations and/or undertake measurement implementation projects to gather data where it does not exist (in relation to the BePA approach).

Collaboration will facilitate the collection of better measurement data

One example that stood out was the Safer Boating Forum, which is a collaboration of organisations relating to boating in New Zealand. In 2017 the forum released a report with a wealth of measures included, such as the achievements it had made relating to the penetration of the of messages it has been delivering to boaties. However, the benchmarking measure required would be whether the

initiatives the Forum is undertaking are achieving better SAR outcomes, whether there are opportunities to intervene in other ways could be more effective, and whether these interventions remain successful over time. What is measured in the report are a reduction in deaths (relevant to the over-arching goal of safety) but not whether they achieved better SAR outcomes. It would be possible to map these two figures to one another using SAR data, for benchmarking purposes. This report represents a valuable initiative of great potential for future benchmarking, noting that its focus will necessarily be limited to the recreational boating sector.

Section Four: Recommendations and Opportunities

Recommendations

Recommendation 1: Establish streamlined benchmarking data

Under current arrangements, it appears that organisations with greater levels of resourcing are able to establish objectives and measures, or 'indicators' which facilitate some mapping of the effect of campaigns or initiatives. However, campaigns with less resourcing may rely on measures such as social media 'likes' but do not have established ways of making the data available to be benchmarked accurately or to clearly establish a link between the 'initiative' and its 'effect'. Furthermore, we have discovered that while some measurement is strong, the measures captured do not necessarily relate to the requirements of this report.

As such, there may be an opportunity for NZSAR to consider how to fund or support the process of establishing measurements within the sector with a very clear focus on its better SAR outcomes objective (as outlined in Section 1).

Recommendation 2: Put the full BePA Model into action

Once quality data can be collected, NZSAR could create the next iteration of the BePA Report, by:

- **Issuing surveys** to all SAR organisations with a role in behaviour change relating to better SAR outcomes for recreational safety, based on the findings of this preliminary report, with targeted information and measurement requirements (as per Appendix Two draft example) requested.
- **Establish a detailed across-the-sector picture** (relating to the goal of better SAR outcomes) using the BePA Model against each organisation, the four categories (air, land, in-water, on-water) and across the sector entirely using the gathered information.
- **Identify and interview other sectors** with data relevant to the BePA model which could be directly applicable.

Given the findings of this report, it is likely that some of the measures provided in the next report would still only be "indications" of success. However, over time and as the sector establishes fulsome benchmarking measures and reporting (as per Recommendation 1, above), the ability to map and report on these measures against the BePA model over time will be significantly less laboured, and significantly more accurate and useful.

Recommendation 3: Clearly (re)iterate the strategic goals of the benchmarking exercise to the sector

The BePA Report could start with a restatement of NZSAR's goal:

Reduce the need for search and rescue through prevention and preparedness initiatives.

The BePA approach could also state NZSAR's intent to:

Empower SAR organisations (and supporting organisations) to achieve the goal of a reduction in the need for search and rescue through prevention and preparedness initiatives.

As a reflection of the above goal and statement of intent, the subsequent NZSAR BePA objectives could be to:

1. Provide the sector with the tools that they need to identify and establish their own benchmarking and goal-measuring activities, to make better decisions regarding their initiatives.
2. Work with the sector to assist in identifying potential areas for improved effectiveness, collaboration and efficiency in the frame of prevention and preparedness.
3. Provide a report that can be used to track success over time, individually and collectively, and to review the impact of the sector's initiatives.

In addition, and as a further reflection of the above goal and statement of intent, the outcomes sought by NZSAR could be:

1. An increased awareness of the initiatives from the sector in prevention and preparedness by recreationalists because of this concentrated effort.
2. A notable reduction or trending reduction in SAR call-outs and/or a decline in the seriousness of SAR requirements because of the sector's collective efforts in their prevention and preparedness initiative/s.

Opportunities

The opportunities for the sector are more far-reaching than simply providing a 'score card' or performance every few years – they will provide opportunities to identify areas for improvement across the sector over time.

Opportunity 1: Take the information into action

Following the completion of the next iteration of the BePA Report, HenleyHutchings recommends a Prevention and Preparedness Action Plan is produced.

The core purpose of this Action Plan would be to apply the findings of the updated BePA Report into one cohesive strategic document, which is used as the sector's operational "roadmap". This could be leveraged to enhance or identify further funding opportunities, and support.

The document would clearly identify the activities for each Action Team to collaboratively undertake and the measures required, so that these can be established alongside the initiative to facilitate the collection of better benchmarking data for future reporting.

This Action Plan would very clearly map back into the NZSAR Annual Report and Long-Term Planning exercises.

The Action Plan would be an operational application of the findings across the entire sector directly relating to preparedness and prevention activities for the recreational sector with the objective of better SAR outcomes, including the following detail:

- **Prioritisation of the opportunities and initiatives** as identified throughout the BePA Report
- **Identification of Action Teams** from within the sector, focused on the four areas: air, land, in-water and on-water (as per the Hight framework).
 - **Establish if there is a need for sub-teams** (for example, the Safer Boating Forum already exists)
- **Identify specific actions**, costs, timelines, responsibilities, funding opportunities and desired results across the sector as they relate to the strategic objective.

- **Establish benchmarking measures:** each action would clearly require an identified set of measures for benchmarking the impact of the initiative/s over time on behaviour change, as per the BePA Model.
- **Encourage sector-led collaboration:** use the Action Plan as an across-the-sector operational strategy which is owned and driven by the Action Teams with input across the spectrum of the sector including NZSAR and other support agencies.

Opportunity 2: AdventureSmart review and potential upgrade

There is value in the sector conducting a deeper investigation into the way the AdventureSmart website fits into the SAR puzzle and its potential future use/s (see Appendix One for further detail)

One way to achieve this would be to undertake a project that considers the use, usefulness and purpose of the AdventureSmart resource in the current context as well as the broader context of the SAR sector and related websites (i.e. TripAdvisor).

Furthermore, this exercise would seek to identify the *perceived* potential users of the site and consider ways to get them to and using the site. One way to do this is to map the audience/s and the ways they may locate and use the site from a user-perspective.

Use of the BePA Model is also highly applicable to this task – for example, this is largely an information resource (information quadrant), however there are some elements of voluntary compliance (compliance quadrant) – i.e. the forms which people are encouraged to complete prior to going on a multi-day tramp. Mapping the site's current application, user types and then identifying opportunities and it's 'place' within the SAR sector is an important project for the delivery of SAR strategy prior to undertaking any redevelopment work. Taking a systems approach to the website development that is also applied across the sector by applying the BePA Approach would work to ensure that the site is not developed:

- In a silo.
- Based on 'perceived' instead of 'actual' need.
- In duplication of another resource without good reason.
- Without a 'goal' focus – i.e. better SAR outcomes.
- Without a clearly communicated purpose (to users).
- Without appropriate links to other SAR sector sites and resources.

If desired, this investigation could be used as the opportunity to put the BePA approach into action in a more in-depth way. This would allow NZSAR to 'test' and 'refine' the operational model prior to it being rolled out in detail across all SAR organisations. The learnings from the application of this to the project could be applied to the creation of more detailed practical steps for other SAR organisations to be able to accurately apply the model to their own organisation.

Opportunity 3: Purposeful, effective collaboration and accountability

Some interviewees suggested the sector has a Rubik's cube of responsibility. They went on to suggest that sometimes it's a challenge to define who has what role and what responsibility for prevention, in what circumstances.

What we discovered from agencies was a view that they, more recently, had more clarity about their role relative to others, than was the case in the past.

Past difficulties alluded to in our conversations included reference to the following:

- Overlap between those with leadership responsibility for funding and delivering drowning prevention programmes, particularly those occurring at the foreshore (Water Safety NZ; Surf Life Saving NZ; Coastguard NZ).

- Overlap between the leadership responsibility for funding and delivering information to assist trampers to avoid getting themselves into difficulty (DOC; Mountain Safety Council; LandSAR; Federated Mountain Clubs and; NZSAR).

The recent improvement in clarity was attributed to two factors. First the value of the coordination and information sharing role played by NZSAR and second, the current general richness of the relationship between each of the key sector players.

Other, sector-specific opportunities

Develop a “care” culture

Some interviewees suggested agencies could do more to inculcate a culture of care amongst fellow track users by encouraging them to provide more guidance and advice to others particularly when risk is evident. All too often – whether because of politeness or other reasons – obvious levels of ‘under preparedness’ by trampers or coastal kayakers goes without comment.

A ‘shared care’ campaign may be one way to break down past excuses for not providing ‘wise counsel’ and help people to see that sage advice is not meant to be criticism.

Let’s not use too much ‘cotton wool’

As noted by DOC, positive risk is where a hazard provides a recreation opportunity desired by the predominant visitor group, despite the negative risks associated with it. Some hazards may be the primary attraction or a feature of the destination e.g. a geyser or a tomo like Harwoods Hole.

If this is the case, management actions should be carefully considered, to avoid decreasing the value of the experience that visitors are seeking.

Check the weather forecast

Enormous progress has been made over the last decade to make weather information accessible, but there is always more that could be done.

The example of MetService’s inclusion on their website of a forecast designed explicitly for users of the Tongariro Alpine Crossing is an example of this progress.

An example to draw upon for the future is perhaps the use by NZTA of 20 solar powered signage boards warning drivers of risk conditions. An equal approach could be applied at outdoor high risk / high use outdoor tramping sights like the Tongariro Alpine Crossing, although it is possible, the traditionalists may find this too intrusive.

In addition, some interviewees felt agencies could do more and be more directive about encouraging a ‘stay in the hut or stay at home’ message when bad weather is pending. Equally this could apply to instructions about necessary clothing when the conditions require it. However, we acknowledge there is a limit to the reach organisations should have into people’s lives.

Making better use of emerging technology

New tools may include activated cellphone text-prompts (when coverage allowed for it) containing safety messaging at the start of tracks – in the manner of that applied by Maritime NZ for coastal boat users.

On a similar theme, Hut log books are notoriously under-used. With good marketing, trampers could be encouraged to make far better use of an App designed for all users to log their adventure intentions. Provided this tool was used in a disciplined way, it would likely greatly assist with the task of locating an overdue back country track user or hunter.

Social media use is becoming an increasingly important tool for assisting with outdoor recreation preparedness. We draw your attention, for example, to the Te Araroa Facebook page, although we also note that some of the information contained on this site is not always accurate. One option to consider is

for affected organisations making a monthly investment to ensure correct information is included on such sites.

SLSNZ noted they cannot rescue everyone, they cannot control every beach, but they can increase the level of safe swimming awareness, provided they have the right funding, the right tools and the right information. If they had the funding, they noted the opportunities provided by such things as:

- Text alerts when people pass an activation point as they head to the beach.
- Geo-sensing technology to inform surf life savers where people are located.
- Other future tools such as the use of drones to drop flotation devices to persons in difficulty.
- Use of drones to locate rips or to observe parts of the beach not visible from usual beach observation posts.

The simple message from the above examples is that digital communication technology is moving fast, and the sector needs to stay on top of it. One way of doing this is for NZSAR to prepare a think piece and a related action plan (see the recommendations provided later in this report) designed to draw on best New Zealand and overseas practice to anticipate and facilitate application of cost effective communication practice.

Distress beacons

One of reasons for the increase in the Category II land-based incidents recorded earlier in this report has been the increase in the use of distress beacons. There are now close to 70,000 registered beacons.

One measurable impact of distress beacons in the SAR sector is that the trend of increased Category II land incidents and the decline of Category I land incidents, which NZSAR has attributed to the increase of distress beacons. The speed and accuracy of the location provided by personal location beacons has been a major factor in the effectiveness of these. This suggests that there may be an opportunity to further promote the use of registered personal location beacons.

As noted by one of our interviewees, the number of alerts may be considered modest when compared to the increase in registrations.

Accessibility - helping make the great outdoors a playground for everyone

LandSAR noted the steady increase in the number of Category I land incidents involving people in the 'Wanderer' category. This trend is likely to continue given the ageing nature of the New Zealand population and the correlated increasing proportion of fit persons with dementia-related illness.

The LandSAR focus in this domain is a good example of an organisation's capacity to adjust to changing demands. More funding to this activity has been allocated to improve its service.

'Bang for buck' – continuing to target areas of greatest concern

The Recreational Boating Rates of Participation survey (2017) shows a large gap between the number of people acknowledging safe behaviour and the number of persons implementing these safe practices.

The Safer Boating Forum believes that a large proportion of boating-related deaths may have been avoided if the affected person had been wearing a lifejacket (see page 69, <https://www.maritimenz.govt.nz/recreational/safety-campaigns/documents/PBSAG-full-report-December2014.pdf>) and has recently issued a position statement stating that all people on recreational vessels 6 metres or less in length should wear personal flotation devices at all times while the vessel is underway (see <https://www.maritimenz.govt.nz/about/people-we-work-with/safer-boating-forum/documents/NZ-Safer-Boating-Forum-lifejacket-position-statement.pdf>)

The sector has acknowledged the challenge associated with changing the habits of those aged over 45 and continues its efforts to influence the behaviour of all boat users.

New, more intrusive or more targeted methods may be required, perhaps drawing on the lessons applied by NZTA in its drink-driving work and the quit smoking campaigns led by the Ministry of Health. There is a

significant “social marketing” literature in parallel areas of activity such as these. At the same time, the long game implies the need to focus on creating good habits amongst younger boat owners. Additional resourcing may be needed to develop multipronged strategies aimed at changing the safety behaviours of established boat users and also encouraging good safety behaviours of newer or younger boat users.

Paddle craft (the fastest growing water-based recreation group) is increasingly represented in the annual boating toll. Paddle Boards and plastic sit-on-kayaks are now reasonably cheap and accessible. New and different methods may be required to access this growing group. A targeted campaign may be called for.

Despite, or perhaps because of, the number of boats in New Zealand, there are no registration requirements, there is no direct means of contacting their owners and there is no direct means of enforcement except by means of regional council by-laws and the Maritime Transport Act (1994). Greater regulation would require political commitment.

Many boat owners want to keep it this way, believing the right to be reasonably free of regulation when on the ocean is God-given.

These are the broad constraints the sector operates in. Despite these limits, our interviewees felt Maritime NZ had done well with its safety programmes. However, they agreed there is a need to continuously review relevant legislation and compliance strategies. They also felt Maritime NZ needed to be ready to respond to fast-paced technological change, with tools suited to their safety task.

Coastguard NZ told us they have considered compulsory training for all owners of boats above a certain size – with possibility of warrant of fitness. They noted that currently, individuals can have a recreational craft of almost any size without any training. They also noted the correlation between those who get into trouble and those who have no training.

Some interviewees felt the need for an owner of a boat of specified size or power to undergo training and acquire a license – with appropriate cost recovery. Is now the time to put this more formally back on the table?

Funding - more of it, more frequently

Funding was often referenced in our conversations with sector organisations. The availability of more money would of course enable more delivery of better focused prevention / preparedness actions. Funding is a complex issue which cannot be fully considered here. Some feedback provided is reflected in this section.

Interviewees from different parts of the sector drew our attention to different funding issues:

- Many agencies would like the Lotteries Grants Board to consider making multiyear allocations to reflect the multi-year nature and effectiveness of many of their programmes.
- The Lotteries Grants Board apply a formula to define how much goes into the outdoor recreation safety pot. Getting it out of the pot is a competitive process. Funding is provided to successful applicants for a year and then the applicant must reapply. Some interviewees felt it would be valuable to have more funding certainty by having three-year grants. This would enable better planning.
- The same agencies would like the Lotteries Grants Board to adjust the timing of the release of notice confirming successful funding applications to match their March to March or July to July financial year, rather than part way through that financial year or on the cusp of the commencement of necessary summertime campaigns.
- The current investment of FED funding in recreational boating is disproportionately low in comparison to the quantity of petrol purchased by recreational boaties, and the growth in the number of recreational boaties over the past few years.
- More groups are getting on the water, but many do not have the history and necessary ‘cultural references’ to give the right level of attention to being safe. More funding would enable, more Coastguard boat education campaigns to be delivered to more minority ethnic groups and communities.

ACC was sometimes referenced as a source of additional funding. It was felt that the ease with which ACC could fund the accident prevention activities of organised sporting organisations gave these organisations an advantage not enjoyed by those involved in the outdoor recreation 'individualised' pursuits. We note for example, MSC's documentation of the very high and constantly increasing number of injuries associated with mountain biking.

We think there is a case for NZSAR collaborating with its partners in preparing a business case for consideration by the Board of ACC, demonstrating the value of ACC investing more funding into injury prevention in this domain.

Such a business may define the: cost of injury; cause of injury; programmes to reach participants; how many participants; what objective – what difference will it make; who influences them; and how best to reach them.

Similarly, the focus of Sport NZ is on both active recreation and outdoor organised sport. The challenge they face with active recreation is it is less regulated and less joined up.

Our hope is that publication of this report may be a catalyst for a rethink, with the help of NZSAR, about the volume of funding made available by Government to their partner organisations.

Our hope is that the report may also stimulate thinking about the need for an on-going focus on the effectiveness and efficiency of all funding. We were impressed to note, for example, that almost all current funding is directed to activities reflecting the findings of quite sophisticated strategies, insight work and other planning instruments put in place by the sponsoring organisation.

Better understanding of the 'near missed' accident or injury

It is challenging for the sector to accurately identify 'all' near missed opportunities. Furthermore, defining a 'near miss' can have its challenges. However, we are aware that MSC and WSNZ are undertaking more research in this area. Our interviewees saw great value in this work. There may be an opportunity for NZSAR to review this work and consider its application to other areas. Further surveys could be undertaken, for example, to ascertain the level of knowledge held by travellers before they embark on a tramp.

We support the commissioning of more 'insight' work of this type. Its value is that it harvests the lessons learned and it may generate modifications, and on-going improvements to efficacy of prevention and preparedness programmes. To this end, we note NZSAR have recently commissioned a 'land observation' survey and intends to carry out a 'rescued persons' survey.

It is important to note, however, that this opportunity is not directly measurable in the same way that other data may be accurately assessed – instead, this information would be used to inform initiatives and the way are they developed and communicated.

Getting better at capturing and applying post-event data

NZSAR are currently updating their approach to information recording post a SAR incident. Currently there are two forms – one used by the Police and another used by RCCNZ. There is a further form for incidents activated by a PEB. The current system is not fit-for-purpose and NZSAR are acting to create improvements.

A critical additional information parameter is whether death occurred before or after SAR involvement. We were surprised at the number of deaths in the outdoors which may have been suicide.

We congratulate NZSAR on its SARdonyx project. We can see this making a significant improvement to data management and its subsequent use to prevent death and injuries.

Capturing pre-event data

There are opportunities to collect data from recreationalists prior to their journey. This could take the form of in-person surveying, information collated by recreational 'delivery' agents such as tour hosts prior to journeys and online surveying. DOC has recommended a pre-event data approach and is a strong supporter of understanding preparedness prior to embarking on journeys, particularly relating to the visitor sector, as a means to understanding behaviours and use of information sources. DOC noted their interest in where visitors get information from, how credible they believe those sources are and their risk tolerances and understanding of risks they may face in the recreational environment. These are all important questions relevant to preparedness and prevention.

Mining the data

MSC view ACC data as a treasure trove to inform strategic preparedness and prevention interventions. All that is required is the funds to access what is there and then the application of data cleansing / mining techniques.

WSNZ is equally adept at mining the treasure trove. Agency reports reveal the merit of doing this. Funding requests for this type of work should receive on-going support from NZSAR and other potential funders.

Appendices

Appendix One: SAR sector's role in prevention and preparedness

One of the purposes of this report was to stimulate further conversations about what it might take to achieve a more cohesive understanding of the level and effectiveness of current prevention and preparedness activity.

The way sector agencies manage visitor safety reflects a complex set of societal values and expectations. Generally, agencies enable the traditional 'nature on nature's terms' style of recreation where people are free to make their own decisions about the risks they take.

For some recreationalists, a high degree of self-reliance and risk taking is essential to the quality of their experience, while for others the assurance that risks are being managed for them is equally critical.

It is part of the New Zealand culture to not wrap everyone in cotton wool. However, there are many more injuries and deaths than there should be. These are climbers, for example, who over-estimate their own ability or underestimate the scale of the challenge they are embarking upon, particularly when the weather turns bad.

Vulnerable recreationalists are those that do not have the skills, knowledge, fitness or experience of the predominant group that the destination is managed for.

These people may overestimate their skill level, or do not access important information prior to a trip and therefore attempt outdoor experiences for which they do not have adequate outdoor skills or risk awareness. They have a dangerous "optimism quotient" in their thinking.

Challenges within the sector

Three challenges provided by the sector can be summarised as follows:

1. The appropriate scope of an individual's responsibility.
2. Responding to a complex and evolving environment.
3. Working effectively and efficiently together.

Further detail to each of these points has been provided, below.

1. Individual responsibility

NZSAR's concern is that the public often fail to take adequate responsibility for their own safety which can lead to avoidable SAR operations and/or poorer outcomes when SAR is required.

NZSAR, and all the sector organisations talked to as part of preparing this report, said they had experienced too many examples of poor planning, insufficient preparation, unsound decision making and inadequate equipment.

They agreed, their primary shared goal was fewer deaths, fewer injuries, less SAR responses and more enjoyment of the greater outdoors. However, what is important is to not intervene to the point where the joy of the outdoor recreation experience is sanitised and made sanguine by over enthusiastic third-party control.

Outdoor recreation is part of New Zealand's historic and cultural heritage and an important aspect of our national identity. Taking risks, challenging ourselves and proving our self-reliance are an integral part of the outdoor recreation experience.

The Visitor Risk Management Policy developed by DOC provides good guidance on this point. It puts personal responsibility first. It then tailors the level of DOC intervention to the skill level of the visitors. What this means is that for experienced visitors, DOC will provide information to enable them to manage their own risk, and for less experienced visitors DOC will manage more of the risks for them, for example, by providing frequent warning signage, bridges and barriers.

2. Complex and evolving environment

A further challenge for the sector is that it operates in a complex and evolving environment characterised by scarce resources, technological change, increased public expectations and a heavy reliance on the voluntary support.

Each of these influences presents challenges requiring on-going attention. They arose in almost every one of the conversations had as part of the process of preparing this report.

Comment on how they may be addressed is sprinkled throughout the remainder of the report. In simple terms they imply a need for the sector to stay abreast of change and to respond accordingly. What must be avoided is the force of the status quo. It is all too easy just to carry on in the same manner as the past.

3. Agency relationships

A final challenge relates to agency relationships. There are many agencies working extremely hard to enhance recreational safety. The question is this – are these agencies all clear about their responsibilities and sufficiently coordinated to ensure efficient delivery of each of their programmes? Are there any gaps in delivery? We believe that by embedding the BePA approach into initiatives across all organisations, the next iteration of the BePA Report would provide further key indicators to NZSAR where strategic interventions could greatly benefit the sector.

SAR Sector's perceived roles and responsibilities

Part of the brief for this report was to describe the contribution each of the organisations in the sector make to sector objectives. The following section examines the efforts of individual organisations in prevention initiatives. (NB, we have deliberately not used term 'effects' of activities here because of the difficulty we experienced in gaining access to accurate data about the changes achieved because of the identified initiatives).

Air

Civil Aviation Authority (CAA)

Prevention and preparedness role and activities

CAA activities are targeted at the commercial and regulated use of airspace sector. They also have a small 'special flight operations and recreational' unit to provide oversight of all matters to do with the recreational use of air space.

CAA may assist with any enquiry established after a significant airspace recreational incident or death. This role, for example, led to the requirement for providers of paragliding training to be registered.

The Authority have the powers outlined in Part 115 of the Act on Adventure Aviation to rely upon to generate regulations if they are required.

Funding

Information about the scale and effect of CAA funding on recreational use of air space are not available.

Preliminary impressions

Accidents arising from the use of paragliders and hang gliders are the subject of close CAA monitoring. CAA's view is that users appear to be reasonably safe while under instruction, but it is the period immediately beyond when the number of incidents increases. They have also noted the number of incidents arising from international users coming to New Zealand without experience of our mountain flying conditions.

The Authority are also closely watching the non-regulated use of drones adjacent to commercial aircraft. This is becoming an increasing worry, but this activity is not the subject of this report.

On-water recreation

Coastguard

Prevention and preparedness roles and activities

The Royal New Zealand Coastguard, or Coastguard, as it is generally known, has two parts: Coastguard NZ (Boating Education) and the Royal NZ Coastguard (Search and Rescue or SAR).

The Royal NZ Coastguard is

- A federation of four regions with 63 units – all of whom are separate entities. They have 82 vessels and 2200 volunteers who committed 310,000 hours of their time in 2016/17.
- Is the primary civilian marine search and rescue organisation for New Zealand. Unlike several other countries, the organisation is a non-governmental, civilian charitable organization.
- Collect a lot of data including information on near misses, particularly if this is recorded on the data logs operated either by Coastguard or commercial vessels.

Most of the Royal NZ Coastguard work in non-urgent, i.e. not responding to life threatening, events. This is "preventative SAR".

Coastguard NZ assisted to develop the Boating Safety Code and the NZ Safer Boating Forum Strategic Plan.

The Strategic Plan for Coastguard NZ has goals focused around:

- Research and analysis.
- Implementation initiatives that are
 - risk-based
 - relevant (fit for purpose, current, easy to apply, meet community needs) and
 - robust (durable, adaptable and evidence based).
- Information: better data collection, strategy, partnerships.
- Targeted actions which are risk based, relevant and robust including: lifejacket regulation; alcohol and drugs regulation; options for compulsory safety education; training needs analysis; vessel sea worthiness etc.
- Collaboration, including: three-year safety awareness campaign; option of a common website; media policy; annual safer boating week

The responsibility of the Coastguard is usually beyond the surf line. Within the surf line, Surf Life Saving New Zealand has a leadership role.

Coastguard receives some funding from the Ministry of Transport via a Service Level Agreement. This equates to about 12.5% of their overall operating budget. Coastguard Boating Education receives some funding from WSNZ to deliver a small number of courses, but most of their courses are paid for by the general public. These include: day skipper; UHF radio use; Boat Master; waka ama; sea kayak; in-water survival; jet skis; power boat; bar crossing etc.; GPS operation; radar operation; ocean yacht and a programme for kids.

Coastguard NZ view themselves as the 'go to' organisation for boat safety advice. They do not have enforcement powers.

Funding

The budget for Coastguard services in 2016 was \$20m of which \$2.5m was from Government via a Service Level Agreement and drawn from FED monies. Other funding was received from the Lotteries Grants Commission, training course fees and from fund raising and philanthropists. The biggest cost faced by the organisation is for operating and maintaining Coastguard vessels.

A big challenge faced by the organisation is the large capital costs associated with boats with an average value of \$750k and ten years of life. The cost for the organisation continue to increase e.g. staying on top of Health and Safety Act responsibilities.

Preliminary impressions

Assessment of information gathered by the Royal NZ Coastguard suggests 'human error was highest (193) and mechanical failure (169) was the second highest. Weather related influences affected 95 incidence and inexperience was recorded as being a factor in 76 incidents.

Data compiled by the Safer Boating Forum indicates 181 incidents in 2016-17 were with a skipper with no qualifications. This is almost three times that of those with qualifications of one type or another.

Regional Councils and harbour masters

Prevention and preparedness roles and activities

Most harbour masters are appointed by the local Regional Council. The key boating safety role of a harbour master is to promulgate and enforce navigation and safety bylaws. In doing this, harbour masters operate as co-regulators in partnership with Maritime NZ.

Most harbour master water safety efforts are directed toward providing advice about safe boating.

Harbour master responsibilities vary in terms of the area they cover. Most cover the zone extending to the boundary of the Coastal Marine Area i.e. 12 nautical miles offshore and often extend to the in-land / estuary parts of the coastal marine area – sometimes as far as ten kilometres from the coast line. Some lakes also have harbour masters

Harbour masters will operate where recreational boating safety pressure is most evident e.g. speeding jet skiers amongst swimmers in Lyall Bay, Wellington. They also give talks and review safety plans e.g. for a recently planned jet ski crossing of Cook Strait.

Harbour masters do not view themselves as having a direct link to NZSAR. Their primary sector link to prevention and preparedness activities of recreational boaters is via the Safer Boating Forum and by association with the Coastguard and Maritime NZ.

There are parts of New Zealand where harbour masters are not active. This is because very few people use these areas for boating activities. In other areas, harbour master responsibilities are subcontracted to third parties.

Queenstown Lakes District have their own harbour master and Department of Internal Affairs employ the Harbour Master for Lake Taupo.

Maritime NZ and ten regional councils applied a "No excuses" onwater enforcement campaign from March 2017 to March 2018. This was targeted at recreational boaters not carrying or wearing lifejackets

and those who speed on the water. The programme included the issue of infringement notices of up to \$300, for unlawful behaviour. Maritime NZ funded nine councils to provide additional staff, time and resources to the campaign, on top of the safer boating work these councils already did. During the campaign, Harbourmasters' staff and Maritime NZ's Maritime Officers worked together to interact with boat users and capture observations of their behaviour. 2017/2018 was the second year the "No excuses" campaign ran.

Funding

We have found it difficult to separate out the cost of the recreational boat safety responsibilities of Harbour Masters from the funding provided for their other navigation and commercial vessel responsibilities.

Preliminary impressions

It is difficult to separate out the safer boating outcomes achieved from the actions of the Harbour Masters from the actions achieved by other agencies.

Maritime NZ

Prevention and preparedness roles and activities

Safety features in the Mission of Maritime NZ – 'our maritime system supports, encourages and requires strong safety standards and behaviours' Compliance group aiming for maximum levels of voluntary compliance.

Maritime NZ participate in recreational boating accident investigations, although these mostly rely on Police and coroner enquiries. The Manager of Intelligence and Planning is responsible for these investigations.

Maritime NZ have moved a long way over the last decade in terms of the scale of its involvement in recreational boating safety. They are now a funder of many preventative and boat-user preparation programmes.

Maritime NZ have provided leadership of the New Zealand Safer Boating Forum and have delivered a Safer Boating Strategic Work Plan. This has been the primary means of achieving progress over the last five years. It is a good example of how to bring very different groups together, noting boat users are hugely diverse and range from super yacht owners to kayaks to stand-up paddle board owners.

More particularly, Maritime NZ:

- Apply compliance strategies and campaigns that lead to improved safety attitudes and behaviours across the recreational boating community.
- Use monitoring and risk profiling to ensure the most appropriate interventions are chosen to address risks to safety.
- Implement the seafarer certification framework to provide for confident, well trained seafarers and internationally acceptable seafarer qualifications.
- Strongly support the NZ Safer Boating Forum as a method to conduct a combination of safety awareness programmes and enforcement.
- In partnership with regional councils and harbour masters, use enforcement as means to target key risk factors leading to fatalities such as: failure to wear lifejackets; and not carrying emergency communications equipment.
- Work closely with Coastguard and harbour masters on enforcement. Coastguard have expressly declined to involve themselves in enforcement activities, but work with harbour masters on enforcement.
- Focus on safety awareness, backed up by limited enforcement if required.
- Refreshed the New Zealand Port and Harbour Marine Safety Code in 2016.

- Developed annual safer recreational boating advertising and educational campaigns and have funded many agencies to assist them with the delivery of these.
- Work closely with regional councils and harbour masters throughout New Zealand in promulgating any regulations required to assist safe boating and to prevent drowning.
- Is well underway with work to refresh the database and registration system for distress beacons in New Zealand
- Through the Pacific Maritime Safety Programme, is working with small island nations in the Pacific to improve their search and rescue capability.

There are 40 Maritime NZ officers throughout NZ. These officers are mostly focused on commercial activities but they also available to undertake recreational safety advice and enforcement activities.

Maritime NZ also have a 'response' role. This is mostly operated through the funding support they provide to RCCNZ – who are the primary link to NZSAR – noting that RCCNZ are the agency responsible for registering location beacons and promoting awareness of beacons.

Funding

Most Maritime NZ's water and boating safety work is funding with the assistance of the fuel excise tax primarily destined for expenditure on roads by NZTA but, in this case, calculated as due for expenditure on the sector because of volume of fuel use by boats. This totals approximately \$5m. A percentage of this sum also supports the work of the RCCNZ.

Preliminary impressions

The average annual rate of maritime fatalities and serious injuries has broadly trended downwards over the last ten years. The number of people going boating has increased, many of whom use paddle craft, jet skis or small power boats. Such craft can easily be caught out in adverse weather and unless boat users make safety behaviours a priority, those on such craft are vulnerable. Funding has not kept pace with the increases in the number and variety of recreational boat users, meaning that additional resourcing may be needed to make sure safety messages and campaigns reach recreational boat users and are effective in influencing behaviour.

On average, approximately 21 recreational boating-related fatalities occur per year. Many harm related incidents on recreational boats are not reported to Maritime NZ and other sources of data such as from the health sector would need to be used to estimate such harm, including costs and trends.

A total of 101 fatalities occurred in the last 5 years. Up to two thirds of these may have been saved if the affected person had been wearing a lifejacket.

In-water recreation

Drowning Prevention Auckland (Watersafe Auckland)

Prevention and preparedness roles and activities

A special organisational arrangement is applied to drowning preparedness and prevention is applied in Auckland. This is justified because of the density of population in this area and their proximity to water. The work of Drowning Prevention Auckland has the strong support of Auckland local authorities and WSNZ.

Pacific, Asian/new settler, Maori and school children aged 5-15 are the focus of attention.

Drowning Prevention Auckland can offer NZQA credits in collaborations with Coastguard Boating Education or Skills Active. DPA's approach is to increase water competence, knowledge and understand risk apply a NZQA approach with training to achieve core 'competencies' at the core offering.

Funding

The organisation started with a research focus. It is funded through the Auckland Regional Amenities Funding Board. It receives funding of \$1m per annum.

142 organisations deliver water safety messages in some form in Auckland. Drowning Prevention Auckland believes that all of them need more money particularly as drowning is fourth biggest cause of death behind road accidents.

Preliminary impressions

The emphasis of Drowning Prevention Auckland is at the top of the cliff rather than bottom.

Drowning Prevention Auckland activities have a similar effect to those described above for WSNZ.

Surf Life Saving NZ

Prevention and preparedness roles and activities

Surf Life Saving NZ (SLSNZ) is perhaps the best known of the 'prevention of drowning' water safety programme providers. Their focus is on beaches, coastal waters and the foreshore. Having visibility on the beach is a critical part of this. Talking to people about sea conditions, hazard locations or their clothing is typical. Moving flags to reflect tides and conditions are part of the organisation's everyday summertime business. Promotion of safety messages and the provision of information to the public are also part of their business. A Beach education programme for primary school students around the country has been operating for many years.

SLSNZ also want to develop more tools to make it easier for people to make better decisions. Ideas they want to look at include such things as rip current mapping, self-tests on capability and messaging specifically designed for at risk groups such as new immigrants.

SLSNZ are involved in 'response' actions, particularly those suited to use of Inflatable rescue boats. SLSNZ are often first responder to coastal search events and are sometimes involved with flood events – there is a small window of time between an activation and a fatality and SLSNZ often have the capacity to quickly get to the locations they are needed.

The SLSNZ strategy indicates a recognition that there is a limit to how much more rescue services can do to reduce the drowning toll (there isn't the ability to have patrols on all beaches at all hours), and that to make more progress requires more focus on prevention and education – as above, providing people with the tools and information to make better decisions at critical times. This means enhancing their promotion of safety messages and collateral to the public and developing/ testing new tools to make it easier for people to make better decisions.

The efforts of SLSNZ are focused around 74 clubs with 92 patrolled beaches over summer (defined as Labour weekend to Easter). In the summer of 2017, SLSNZ recounted that there were some 115,000 preventative actions logged, impacting 437,000 people as a result of patrolled beaches. With climate change and more tourism there is pressure on this as the 'shoulder' seasons are getting longer. At one location (Hot Water Beach), 7 days a week services funded by the local council have been extended through until June to reflect the need.

Over the summer school holidays SLSNZ provides Monday to Friday lifeguard services on many of the more popular beaches, using funding from Councils to pay the lifeguards, typically university students. Depending on the level of funding and need these services can operate from two to eight weeks. SLSNZ will often use these same lifeguards in primary school education programmes in terms 4 and 1 as a way of providing them with up to three months of work to allow the lifeguard job to compete with other options for employment.

SLSNZ has a multi-level First Aid training curriculum that it offers to members. The first level is a compulsory part of the Surf Life Guard qualification and done in-house, with higher levels voluntary with the delivery contracted out to approved service providers.

Funding

SLSNZ has multiple funding sources – the primary one being NZLGB with an annual grant from the Outdoor Safety Committee. Half of this is passed through to clubs for operating grants and insurance. SLSNZ also has sponsorship at a national level – DHL, BP and TSB are the ‘major’ sponsors. As well as critical funding, these sponsors also help with the public profile of surf lifesaving and getting the water safety message out to the public – particularly via the media. Most of SLSNZ funding is short term and contestable, and vulnerable to shocks. Traditional sources such as gaming trusts are in decline which puts pressure on to find new revenue streams. The 74 clubs are independent entities who are responsible for finding their own funding. SLSNZ does assist to some degree, via NZLGB pass through funding, but the clubs do need so focus a lot of their energies on raising the money they need to operate. SLSNZ does not charge clubs/ members an affiliation fee, but in return has certain branding space available on the lifeguard uniform to sell to national sponsors.

One of the primary drivers of lifeguard recruitment, retention and training is the sporting side of surf lifesaving. It is an integral part of the surf lifesaving operation with the general interest, skills and fitness generated from the sports side creating the volunteer lifeguard base that translates directly into water safety aspects. However, SLSNZ needs to be careful when seeking funding that it’s not seen to be going to a purely sporting activity.

SLSNZ have very good relationship with the Police, the Coastguard and local government. The latter (e.g. Christchurch, Auckland and Bay of Plenty local or Regional Councils) – provide all the annual funding support for mid-week beach patrols.

Preliminary impressions

In the 2018 summer season (Oct 2017 to March 2018), SLSNZ undertook 321 searches; assisted 2,231 persons to safety; rescued 990 people from life threatening situations; provided first aid assistance to 2,861 persons; and engaged in 108,000 preventative actions. In the same period there were only 12 drownings.

In addition, SLSNZ:

- Assisted to develop the Water Safety Sector Strategy via being a part of Water Safety NZ.
- Provided beach education programmes to 38,000 school children
- Supported 5250 lifeguards out of a total membership of 18,500, 43% of whom took an external first aid course.

Water Safety NZ (WSNZ)

Prevention and preparedness roles and activities

Water Safety NZ have a vision with several components:

- All Kiwis, new New Zealanders and visitors have a safe experience in, on or around the waterways of Aotearoa, New Zealand...
- Respect water and be aware of the potential dangers to themselves and others...
- Know how to prevent injury, preserve life and enjoy their water experiences.
- No one drowns.

The mission of WSNZ is to educate, empower and support people throughout their life stages to safely have experiences in, on or around water, to the best of their knowledge, skills and ability. They also wish to be the leadership body which advocates for, represents and supports the water safety sector.

WSNZ's strategic priorities are:

- Capability and partnerships: Work with members to build enduring trust; Work with members to develop an aligned model; Develop new partnerships; Design and implement a robust investment process; Support wider sector capability; Drive behavioural and culture change
- Evidence based collective impact: Target research at agreed sector priorities; Use data and research to make evidence-based decisions and improve sector performance; Invest in campaigns which deliver measurable outcomes; Implement a cohesive sector approach; Support research for which the New Zealand Water Safety sector is recognised as the world leader in aquatic safety.
- Advocacy and public awareness: Deliver an agreed sector engagement and communications strategy which delivers aligned messaging and public awareness campaigns; Enduring public awareness campaigns lead to measurable public behavioural change; Garner high level support and influence for water safety initiatives.

WSNZ also have a policy advocacy role including, for example the 'save our school pools' campaign operated over the summer of 2017/18

NZ Underwater have a 'dive fit' campaign funded with the assistance of Water Safety NZ. This provides best practice information about safety in the water, training and emergency support. The focus of the current programme is on fitness and the need for over 40-year-olds (the category most subject to emergency response) to get a medical check-up and before going diving, particularly after a period of not diving.

Funding

The WSNZ budget is nearly \$4m of which half is distributed to partners to assist them to deliver water safety programmes.

WSNZ funders are Sport NZ, the New Zealand Lotteries Grant Board and ACC, as well as some commercial sponsors.

WSNZ are working towards providing a step-change in drowning prevention. They believe a sector income towards the \$60 Million mark is required to reduce the drowning toll to zero.

Most funding is by way of in-kind contributions from volunteers. The demand for water safety services is growing but the supply of volunteers is not.

WSNZ are a sector leadership agency with a Board that is partially made up of sector partners representatives. As noted previously they are a contestable funding source. They receive twice as many applications as they can fund. There is an argument to support them doing more given that each life saved is worth \$4m. WSNZ are working on a business case building on this logic for presentation to ACC.

Preliminary impressions

An average of 20 million persons visit swimming pools in New Zealand and 1.45 million go boating in any year.

WSNZ expect that their current programmes will help to achieve 50 or less drownings by 2020. Currently there are 80 preventable drowning fatalities.

Immersion incidents, where the victims had no intention of being in the water, remain the largest cause of drowning. This is followed by incidents where people simply went for a swim with unfortunate and unexpected consequences.

Drowning is the fourth highest cause of accidental death in New Zealand – after motor vehicle accidents, falls and poisoning.

The Water Safety Sector Strategy recognises the need for culture change based on the further development of water safety knowledge and survival skills. They not this will have large cost saving benefits for society.

Recent highlights aspects of WSNZ programmes include:

- In 2016 the Water Skills for Life (WSFL), the national standard for aquatic education for children aged 5-13 years, was launched as the successor to Sealord Swim for Life.
- The 'Swim Reaper' summer campaign, supported by ACC, was aimed specifically at young Kiwi males aged between 15-34 who make up about a third of all preventable drowning fatalities and drowning injuries. This programme was said to have reached 65% of target audience.

Research commissioned by WSNZ indicates the majority of "swimming is learned indoors while drowning happens primarily outdoors". This has stimulated a new focus by WSNZ on children experiencing swimming in their clothes or the discomfort of cold water – as a means of mimicking possible real circumstances giving rising to drowning.

WSNZ undertook a benchmark survey with a sample size of over 1000 in 2016/17. Around one third of the respondents to this survey had first-hand experience of a serious situation in the water. 84% had learnt to swim and 53% had some water safety skills. 56% said they had heard water safety messages in the last year with those of Asian descent less likely to have heard these messages than other groups. The need to wear life jacket was the most frequently heard message alongside the need to swim between the flags. Beaches were the place of highest risk. Risky behaviour and over-confidence was an issue. Core messages remembered by the survey participants were: watch children, wear a life jacket, swim between the flags. In our view, this is excellent data with great value in helping to shape the priority of expenditure going forward.

The capability of WSNZ is fundamental to the capability of New Zealand to withstand drownings and to bring the numbers down.

Land recreation

DOC

Prevention and preparedness roles and activities

The most important risk reduction role played by DOC relates to the construction of safe structures and huts and the provision of sufficient information to assist users to enable them to be prepared for their experience.

The Cave Creek incident was an unfortunate but significant turning point for the Department in terms of the emphasis it placed, now clearly apparent, on visitor asset management and systemising its visitor risk work.

The Department also plays an important role in responding to incidents in the Aoraki alpine area where DOC has a specialist alpine rescue team.

The Department is also very much a team player in terms of working with others in the sector to constantly improve the general quality of the preventative and preparatory actions of individuals.

The guiding principles applied by DOC when undertaking prevention and preparedness activities are:

- The range of outdoor recreation experiences available to visitors will be preserved wherever possible.
- DOC is responsible for assessing the risks at visitor destinations and providing information to inform visitors of those risks.
- All practicable steps will be taken to ensure DOC facilities are appropriate for the predominant visitor group and/or activity and meet all statutory obligations.

- The level of skill and competence required for visitors to manage risks will be accurately represented.
- Visitors are responsible for their decisions about the risks they take and for any others under their care and responsibility.
- Visitors are responsible for providing the skills, competence and equipment they require to effectively manage hazards.
- DOC will prioritise management at popular sites which have a high level of risk and a high volume of low skilled visitors.
- DOC is responsible for working with partners to continually improve visitor risk management practices.

We view these principles as 'very sound'. They contain concepts lending themselves to application in other domains, including rivers and the sea.

DOC have a Standard Operating Procedure (SOP), last reviewed in November 2017, outlining how they will manage risk on public conservation land. Salient features of this SOP are that it is:

- Supported by 'Visitor Risk Management Tool' and 'Visitor Risk Management Policy'
- Includes a definition of the role / accountability of each level of affected DOC employee.
- Includes a visitor 'risk management process model' covering such matters as:
 - Formation of a visitor risk assessment team;
 - Assessment of risk likelihood and the consequences and expected tolerance level of visitors – with this influenced by an assessment of the information contained in any incident reports, and the activities carried out at a site.
 - Rating of the hazards at a site – from routine to critical (with the last implying death could occur).
 - Type of visitor likely to use a site – ranging from identification of the gap between current management actions and the 'best practice' for any site
 - Frequency and type of monitoring and review – with increased frequency if any of a range of things justify it
 - Remedial actions to be taken to make good on any gaps identified after an incident.

DOC have also prepared: Visitor Risk Management Policy; Best Practice Guidelines and; Visitor Incident Investigation Guideline. These are robust documents again worthy of careful examination by other prevention and preparedness agencies.

The best practice guidelines cover 33 hazard types ranging from adverse weather events – in so much as they may affect different visitor types, through to avalanche and potential tomo and carpark incidents and contact with farm animals, etc.

Risks are categorised in a matrix matching the likelihood of them occurring (once per week to once every 40 years), their consequence and the type of user. Site users range from 'remote seeker' to 'back country adventurer' to 'short stop traveller' – with the latter having the lowest tolerance to risk. We found this DOC matrix to be a valuable tool as it reflects the core content identified within the Hight 'safety framework', in a practical way.

Funding

DOC has found it difficult to ascertain how much DOC funding is explicitly directed toward outdoor accident and injury prevention and preparedness activities. This is completely understandable given the way focus on this area of business is embedded into almost everything the Department does.

Preliminary impressions

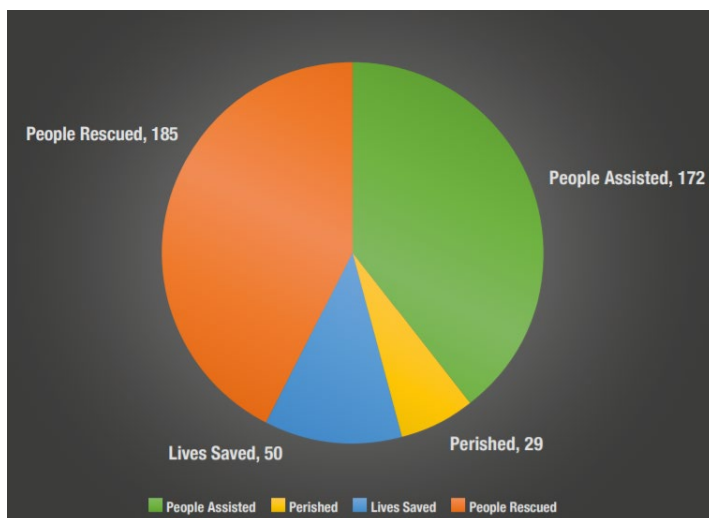
Despite the on-going increase in the number of persons partaking in informal outdoor recreation activities, including walking on public conservation lands, the fact that the number of incidents has not increased over the last ten years may be viewed as testimony to the good work applied by organisations like DOC.

LandSAR

Prevention and preparedness roles and activities

LandSAR play a broad role in prevention and safety preparedness but most of their focus is on 'response' when someone doesn't make it home.

LandSAR helps to provide a safety net for the rare occasions when trips into the back country don't go as planned.



LandSAR have 61 local groups across NZ and 11 specialist teams who may operate at any location requiring their skills.

LandSAR recently reviewed its strategic direction for the organisation, followed by development of a very detailed and comprehensive business plan enabling the organisation to set itself on a clear path for the next few years.

The focus of this new direction is to:

- Maintain and build strong relationships both within the organisation and across the sector.
- Support LandSAR groups and their engagement in organisational-wide activities.
- Continue to develop consistent high levels of performance across the country.

Current prevention activities include:

- Participating in debriefs with Police after SAR operations – identifying how people became lost or injured.
- Analysing search and rescue 'hotspots' and feeding suggested prevention actions back to land managers. Some LandSAR Groups get actively involved in actions such as purchasing and installing additional track markers or signage, if the land manager isn't able to do this.
- Some LandSAR Groups engage in giving outdoor safety presentations and instruction to other groups (eg. Scouts, youth groups, schools)
- LandSAR personnel often provide marshalling and first aid services for outdoor events.

LandSAR work closely with DOC and other partner organisations.

One recent initiative of LandSAR is the 'Wandersearch' programme. This is designed to help manage the increasing number of fit but cognitively impaired persons who are at risk of getting lost in areas, often adjacent to urban environments. The programme includes promotion of the use of radio transmitting pendants (that can be readily located by tracking receivers) by 'at risk' persons.

Funding

The LandSAR operating revenue is \$2.5m. Nearly \$1.5m of this comes from the Lotteries Grants Board. A further \$650k comes as part of the NZSAR service agreement and \$150k is received as a grant from the Police.

Preliminary impressions

In the 12 months ending 31 March 2017, LandSAR volunteers were involved in saving 50 people's lives, lives that may have been lost had it not been for the organisations direct intervention.

Using the Ministry of Transport's economic modelling, LandSAR suggest that saving 50 people's lives meant LandSAR helped avert \$186.4 million dollars in social costs to NZ Society.

Mountain Safety Council (MSC)

Prevention and preparedness roles and activities

The MSC website describes the role of the organisation in the following terms:

"MSC encourage exploration and adventure in the incredible wilderness regions of New Zealand. We encourage you to participate, get out there and see what all the fuss is about. New Zealand is on the bucket list of so many people around the world for good reason. We also encourage safe practices that ensure you make it home to your family and friends. We want you to make it home with adventurous stories, memories and photos. But, most of all we want you to make it home to do it all again next time. That's why on every advertisement, press release, video and resource we reaffirm our intent to help the 1.2 Million+ participants in outdoor recreation to make it home. You can help us spread this philosophy by sharing our resources and following the outdoor safety code, so you make it home."



The MSC vision is: Safer places, safer activities, safer people. Our mission Enabling people to enjoy their outdoors recreation safely.

MSC see part of their role as being building strong partnerships because they believe that by working more closely with their partners, they will:

- 'Make outdoor safety a part of what we do together.
- Act as a hub to connect us all together.
- Make the most of combined knowledge and data to reach specific groups together'.

MSC make extensive use of data to gain insights because they believe that by collecting and analysing new and existing data, they will:

- Understand where people go and what activities they do.
- Know who's most likely to get into problems.
- Identify the most hazardous places and activities.
- Target safety messages to the right groups.
- Share useful information with partners and others.

The total emphasis of MSC is on prevention and preparedness – with the help of 27 partners.

MSC spread their messages widely because they believe by targeting both broad and specific audiences, they will:

- Greatly increase how many people hear their messages.
- Make sure they are reaching the most at-risk groups.
- Make sure people are prepared for the most hazardous places and activities.
- Help many more people stay safe in the outdoors.

The MSC start point is to achieve clarity about what needs fixing. This is the insight part of their task. Sources of insight information used by MSC are ACC, Coroner, NZ Police and NZRCC.

A key MSC deliverable is a set of activity-risk-specific reports unpicking the data about outdoor recreation incidents and deaths and describing them in terms of who, where, why and how. These are available on the MSC website. They contain a wealth of well-displayed information.

MSC differentiate outdoor recreation groups, including emerging groups like trail running and backcountry snow sports, for attention.

MSC are also working with TNZ to find ways to get better reach out to international tourists.

Partnerships are critical to MSC's efficiency and effectiveness. MetService is an example. This includes collaborating on research into the relevance of weather to incidents. Other partnerships include those with 'Skills Active' the NZ Mountain Guides Association, the Te Araroa Trust, the Duke of Edinburgh Hillary Award, the Walking Access Commission.

Funding

MSC revenue includes from Lottery Grants Board, \$278k from Police, \$203 from Sport NZ and \$170k from NZSAR.

Preliminary impressions

The MSC has a strong digital presence. The 'There and Back' report – exploring outdoor recreation incidents in New Zealand, received 63,000 hits. This is a 19% increase on the previous period with 73% new users. Similarly, the MSC's Avalanche Advisory site had 57,000 website users – 32% increase on previous period – 54% are new users with 118,000 sessions.

MSC are also very good at pushing their messaging to media with 700,00 kiwis reached for each of the stories they post. MSC Posters are also well presented with good language and innovative styling.

MSC's partnership with MetService to get placement on their weather web site is critical. MSC also have good placement partnerships with Bivouac, Torpedo 7 Kathmandu and Macpac. These provide effective doorways for the sharing of safety messages.

#MakeItHomeNZ is the MSC twitter account. It has 61,700 impressions. @nz_msc is the twitter account. It had 848,000 impressions in 2017. The #MakeItHomeNZ is a hashag that flows through all MSC social media.

MSC also has other participant-centric channels. This includes 11,290 'likes' on Facebook. – 'Over 24,000 likes across their three Facebook pages, 13,500 on the main page.

Support agencies

ACC

Prevention and preparedness roles and activities

ACC's role includes actions to achieve injury prevention across all manner of activities although, in ACC invests in injury prevention activities and partnerships that address injuries that feature in the ACC Scheme for high incidence and/or severity.

Within the sport and recreation context, this results in a current emphasis on high participation organised sports (e.g. rugby, netball and football) through partnerships with the relevant National Sport Organisations.

ACC also has a partnership with Water Safety NZ (WSNZ) to reduce the incidence and severity of drowning-related injury. This investment covers the leadership of WSNZ, sector delivery (e.g. beach education by SLSNZ) and a summer water safety campaign. ACC investment in WSNZ does not currently cover response activities of SLSNZ and Coastguard.

Lottery Grants Board (LGB)

The Lottery Grants Board, with the assistance of the Outdoor Safety Committee, provide grants to not-for-profit organisations who have outdoor recreation safety or water safety as their core business. This includes agencies who provide search and rescue activities.

The outcome sought by the Outdoor Safety Committee is: enhanced water and outdoor safety for New Zealand communities.

Priority is given to funding activities that will deliver:

- Increased collaboration in the sector, including sharing knowledge, practices and resources.
- Maintenance of outdoor safety sector organisations' effectiveness
- Increases in volunteer capability, community outdoor safety knowledge and skills.

Lottery grants (LGB) are not Crown funding. The amount available as Lottery grants depends on profits from Lotto sales.

MetService

Prevention and preparedness roles and activities

MetService provides core public safety-related weather forecasting services under a contract with MOT. Core services include severe weather outlooks, watches and warnings. MetService is therefore a key source of information to assist outdoor recreationalists to prepare for and be safe as they make decisions about their participation in outdoor recreational activities.

Most other services provided by MetService are via commercial arrangement. For example, most of the mountain forecasts produced by MetService are funded by DoC and were developed in collaboration with DoC, in the interests of meeting users' safety needs.

MetService provides RCCNZ with forecasts supporting Class I, II and III search and rescue activities within New Zealand's SAR area.

MetService makes advertising space available on its website for non-profit organisations such as MSC.

MetService is in discussion with MSC about how to better support the New Zealand Avalanche Advisory.

Weather forecasts for New Zealand are available from an ever-growing number of sources. However, only MetService has the mandate to provide forecasts and warnings of severe weather.

Funding

It is not possible to separate the funding contributed by MetService to its general duties from that specifically serving the 'preparation and prevention' needs of outdoor recreationalists.

Preliminary impressions

Explicit data about the positive effect of good weather forecasting on the prevention of outdoor recreational injuries and deaths is difficult to obtain although some evidence is noted elsewhere in this report about the influence of bad weather on recorded incidents.

NZ Police

Prevention and preparedness roles and activities

The purpose of the NZ Police is to make people feel safe and keep people safe. Police manage emergencies along with partner agencies.

A lot of Police effort goes into training officers to participate in search and rescue activities.

Police also assist by funding and working in close partnership with risk reduction agencies like NZSAR, the Coastguard and MSC.

In addition, the Police compile, assess, share and learn from the data and information generated after each significant outdoor recreation incident or death. This contributes to an understanding of the patterns associated with incidents and the actions which may be taken to avoid the causes of these incidents being repeated. Police and coroner enquires contribute to this learning.

While a strong awareness of the need to promote safe and enjoyable outdoor visitor experiences and services is held by the Police, this is not their core business. For this reason, this report does not apply the format adopted above to describe the role, activities, funding and effect of ACC prevention and preparedness actions.

Sport NZ

Prevention and preparedness roles and activities

Sport New Zealand (Sport NZ) is the crown entity responsible for getting more New Zealanders physically active, keeping competitive sport strong, clean and fair, and ensuring there are pathways for our most talented sportspeople to realise their potential.

The broad scope of Sport NZ includes both sport and active recreation.

Active recreation is a broad term which encompasses various forms of informal, non-competitive activity and includes outdoor recreation.

Over the last 16 years there has been a 7.7% decline in physical activity and within this there has been ongoing movement towards more informal types of activity where participants can choose to be active when they want, with whom they want, at a time and duration which suits.

Through its Community Sport Strategy Sport NZ takes a long-term system build approach with an emphasis on putting the participant at the centre and ensuring that the quality of the experience fosters a lifelong love of participation.

Safety and good practice will be part of the system build approach provided by partner organisations and their providers.

Sport NZ's focus is currently on the low participation communities like teenage girls, Maori, Pacifica and Indian Communities and those generally lower socio-economic communities where, for a variety of reasons, the barriers to participation are greater.

Sport NZ are currently updating their Active NZ Survey. The Report is scheduled to be released in June 2018 and will provide a comprehensive snapshot of levels of participation in active recreation as well as sport as well as the barriers and attitudes to participation.

Funding

Sports NZ is funded as part of Government's core budget process

Sport NZ have a Targeted Outdoor Activity Fund. This is available to organisations involved in the promotion of the engagement of underrepresented populations in outdoor activity by:

- Providing a source of funding for existing outdoor activity providers to develop new programmes for this group.
- Promoting and sharing their learnings with other activity providers.

Preliminary impressions

The Sport NZ 'Insights' tool has been developed to help those operating in the sport and recreation sector to better understand their participants and plan for future demand. The tool gives insight into regional demographics, expected population growth, health, activity behaviours and trends as well as school profiles and sport participation.

Sport NZ leads and facilitates work to ensure a collaborative response from the various government departments and agencies who contribute to the active recreation sector or have an interest in its outcomes. This includes establishing a series of cross-government working groups. An example of this work was a workshop in partnership with ACC and NZSAR in 2016 to discuss skills development and quality participation to minimise risk of injury or death.

NZSAR: Adventure Smart

NZSAR administers the AdventureSmart website. This provides trip safety information for outdoor, water and boating activities, with important resources available in 18 languages. It also contains links to boating, water, outdoor, snow and firearms safety codes. Due to its over-arching strategic function, an analysis of the site was requested as a deliverable within this report. This has been provided, below.

Funding

The AdventureSmart website is funded by NZSAR.

Preliminary impressions

The AdventureSmart website was mentioned in some but not all of our interviews. Most saw advantage in creating a single repository for outdoor recreation safety information, however concern was expressed about some aspects of the current site:

- Web-based information sources may not be the most effective way of communicating with recreationalists because access to the critical information sometimes requires a multi-step process.
- Smart phone applications tend to be more frequently used than web-based applications.
- There is some duplication between AdventureSmart and the range of activity-specific information provided by MSC and Coastguard NZ.
- Greater use could be made of commonly used platforms to access the site, for example MetService or Trip Advisor.
- Users need to know to navigate to 'AdventureSmart' – this may not be intuitive.
- MSC operates a product for land-based outdoor recreational products that may be viewed as an overlap of some functions.

Tourism New Zealand sees value in AdventureSmart. They direct international visitors to this site – particularly as it has resources provided in different languages. They view it as the one place that has all the links to other more-detailed activity-specific sites – the single key to the door.

In addition, they suggest (for example):

- International visitors don't know enough about MetService to know it is a good place to go for weather information
- International visitors don't know that 'Mountain Safety' will provide access to safety information about a full range of outdoor recreational activities.

What does it mean?

What this feedback indicates is that there is a need to more clearly define the purpose and users of this resource – not just externally, but throughout the sector.

To polarise this for consideration, is it:

- a repository for all information for everything recreation in NZ (we suspect this is not the intention) *or is it*
- designed to capture 'less-knowing' audiences – i.e. the less-experienced tourist or recreationalist *and/or*
- perhaps those intending to undertake a range of activities to which they have varying degrees of experience – as a means to providing key information, as a portal to detail from the appropriate organisations?

Secondly, there is a need to understand the user types and their online 'journey' to understand how they use a site and indeed how they find it, and therefore to devise the best way/s to deliver important information.

For example, again to polarise, are they:

- Experienced recreationalists: they know which organisation to go to for the information, they just need it delivered to them in a functional, accessible way – i.e. mobile phone app (which operates both in real-time and with downloadable features for when there is no connectivity), or a mobile-friendly website (less opportunity for use in low coverage areas) *or*
- Inexperienced recreationalists: they are researching New Zealand or are domestic recreationalists with little experience and/or knowledge about where to get information about recreational activities they are interested in (and therefore are more likely to research on a laptop or desktop as they plan their trip on Trip Advisor and liaise with their travel agent)?

Through these polarised examples, it becomes clearer that there are layers of user types and functions that a 'portal' of this kind could successfully engage, and that there is more than one approach suited to achieving their expected use of such a site.

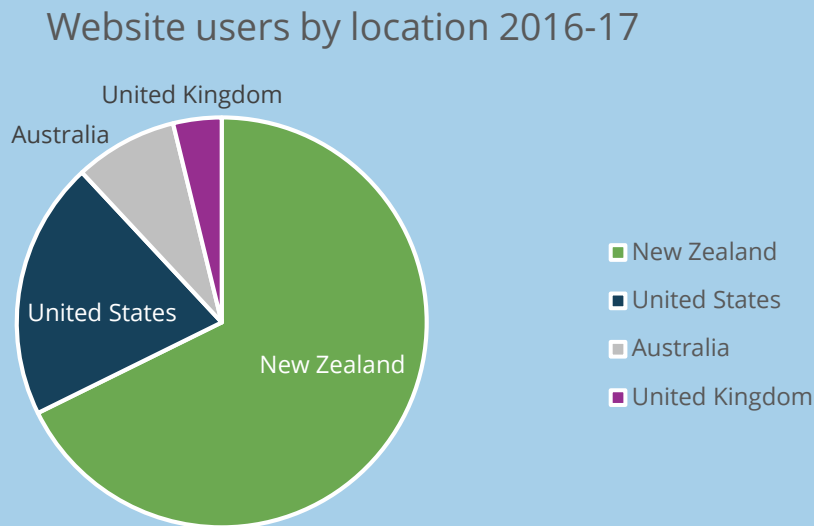
One way to begin to understand these users is to analyse the data available from the analytics reports of the site. Currently, analytics from the Adventure Smart website (Analytics Trend Report January 1, 2017 – December 7, 2017, Wired) demonstrates the following:

- Increasing numbers of "new" visitors up 11.9% since the year prior.
- A steady increase of returning visitors (up 5.1%).
- Increased use of the site (up 10.6%).

The majority of visitors to the site are from New Zealand, however, there are a good number from the US and a fair number from Australia and the UK. Users from every country have almost equal numbers of 'new' visitors' to 'returning' visitors. In every case there are slightly more new visitors than returning ones.

This could indicate that they locate information on the site, but also come back to double-check closer to the time of their activity, indicating that they found their first visit to the site useful and are re-visiting to 'refresh' or locate further information.

Figure 6: AdventureSmart website users by location 2016 - 2017



Information source: Wired Analytics Trend Report January 1, 2017 - December 7, 2017

Furthermore, the most frequent path navigated to get to the site is by direct access - meaning that it is most likely that current users know about the site and what it is called, and type this directly into the address bar. Searching online for information that has lead other users to the site has directed about half the number of people to the site as the direct access group, and only a handful of hits have come to the site via social media indicating some, but not a major driving force to the site from social media channels (approximately 1.93% of the total users visiting the site).

What this analysis provides NZSAR with are indications (assumptions based on data available) that there may also be a gap between the type of people using the site currently, and what NZSAR and the sector believe it's purpose and usefulness actually is. It may also indicate that there is a market of 'potential' users in the areas that the sector believes it *should* be reaching, that don't yet know how to find the site, or that it even exists.

Tourism Industry Aotearoa (TIA)

Members of TIA sometimes distribute pamphlets containing safety tips and guidance.

TIA's role is focused on promoting the interests of agencies and organisations associated with the visitor sector in New Zealand. This includes a strong awareness of the need to promote safe and enjoyable outdoor visitor experiences and services, but this is not the core business of TIA.

For this reason, this report does not apply the format adopted above to describe the role, activities, funding and effect of ACC prevention and preparedness actions.

Tourism New Zealand

Prevention and preparedness role and activities

TNZ is responsible for marketing New Zealand internationally. TNZ's focus is on promoting New Zealand as a destination to people in key markets who are actively considering a visit to new Zealand.

TNZ's main promotion channel is newzealand.com - this links to websites and information that contain information about safe outdoor experiences e.g. DOC, NZSAR, MSC and Water Safety NZ. TNZ also

distributes information to i-SITES. Some i-SITES are exemplars of good preventative and preparedness performance by means of the personalised advice they provide to visitors, for example, about the risks to be aware of when walking the Tongariro Alpine Crossing. Safety information for visitors is generally provided direct from operators that visitors may choose to use when they are in New Zealand.

Funding: Not relevant to this report.

Preliminary impressions

The prevention and preparedness work of TNZ appears effective albeit limited and bound by their emphasis toward marketing the attractions offered to visitors by New Zealand.

Appendix Two: Benchmarking resources

Draft survey example

Please tell NZSAR about your activities that have an impact on:

1. **Prevention:** the use of effective and constructive assistance and hindrance measures, information, obstacles or impediments to stop or limit an unwanted event or behaviour occurring.
2. **Preparedness:** the adoption of 'readiness,' that is, thoughts and actions enabling risks to be appropriately managed. Preparedness may be achieved by participating individuals having an appropriate skill level, knowledge or state of mind to avoid risks escalating to a point where unwanted incidents occur.

Identifying only relevant initiatives

Not all preparedness and prevention related-initiatives are within the scope of this exercise. In scope for NZSAR are those which have an immediate impact on the objective of better SAR outcomes. For example, teaching children to swim is a very important safety initiative that is likely to prevent drowning, should the skill be required. Furthermore, it is acknowledged that a SAR response may be required to assist a drowning person. However, in the same way that a programme teaching people how to safely ride a mountain bike is unlikely to be classified as having an immediate (direct and timely) impact on the need for SAR, these types of training initiatives that focus on the skills needed to partake in an activity have been deemed out of scope for NZSAR's benchmarking exercise. Initiatives relating to training are still very important and should continue to be measured by relevant organisations.

Related, in-scope initiatives would be the 'swim between the flags' initiative which directly outlines where is safest to swim (the impact of which can be measured against similar beaches without the flags initiative in place, relating to the seriousness of SAR outcomes on beaches with and without), or engineering improvements to a mountain bike track that has been identified as having a high injury rate because of the terrain.

Please answer the following questions for each initiative you are undertaking:

Survey 1: Mapping your initiatives

Please complete one survey for each initiative or action relevant to prevention and preparedness.

Name of initiative:

Who is involved?

How is it staffed?

How is it funded?

What are the costs involved annually?

Who funds these?

How does this fit into the BePA Model (circle as many as are applicable)?

Compliance:	Regulatory	Voluntary
Education:	In-person	Information
Infrastructure:	Warnings, ratings, etc.	Engineering
Equipment:	Guidelines	Accreditation

Please explain how it fits in to each of these classifications:

Objective/s relating to better SAR Outcomes

Goals (intended 'over-arching' outcome/s – as relevant to better SAR outcomes).

For example: to decrease the severity of SAR call outs as a result of increased awareness and use of registered PLBs.

Measures that can be benchmarked (relating to specific objectives to achieve the goal) and what you expect them to achieve:

For example: increased purchase, of PLBs, increased registration of PLBs, increased use of PLBs before a Cat I call out (i.e. increase in Cat II) alongside a decrease in Cat I SAR call outs relating to land rescue.

Key milestones:

Long-term objective:

For example: the majority of people hiking in xxx areas will have a PLB.

Approach (what you will do to achieve it and who else is involved):

Start and proposed end date of initiative:

What channels will you use and how (brochures distributed through i-SITEs and hotels, Facebook page with a persona, etc.):

Is this focused to an area, or a nationwide initiative?

Potential collaboration

Do you see the potential for this approach to be useful for other SAR organisations, and if so, who and how?

Current state

Progress to date

How is the initiative tracking against your goals and objectives?

What would assist in making the initiative more effective? Why?

Analysis (NZSAR use)

Principle	Explanation	Assessment
Value for money:	Was there an effective use of budgeted funds?	
Demonstrable results achieving intended purpose/s:	did the actions/initiatives have the desired result on positive SAR outcomes?	
Relevance:	was the initiative/action within the scope of the sector organisation (necessary or 'nice to have'?)	
Collaboration:	was the initiative a collaboration with other appropriate SAR organisations? Could the approach or initiative be applicable to other SAR organisations and is there an opportunity for collaborative practice?	
Mix:	is the mix appropriate for the outcomes desired?	
Other positive impacts:	Did the programme have other positive or unintended benefits?	

Survey 2: Mapping your organisation

Which activities does your organisation have input into? Circle as many as are applicable):

Air Land In-Water On-Water

Relating to the SAR sector, how does your organisation fit into the BePA Classification Model as it related to prevention and preparedness initiatives for achieving better SAR outcomes (circle as many as are applicable)?

Compliance:	Regulatory	Voluntary
Education:	In-person	Information
Infrastructure:	Warnings, ratings, etc.	Engineering
Equipment:	Guidelines	Accreditation

How?

Process for improvement over time

HenleyHutchings recommends that a reporting improvement cycle is used each time a BePA Report is created (see Figure 2). This would help organisations assess what has worked well, or not:

Figure 7: The BePA Report (improvement) Cycle



These steps could be described as follows:

PART ONE:

1. **Identify the strategic goals and framework for the report.**
 - a. What are we aiming for? What do we hope to achieve? What does success look like?
 - b. Confirm the developed framework is still applicable.
2. **Assess the current state:** How are we shaping up right now (against the BePA systems approach)?

3. **Celebrate current, relevant initiatives:** showcase examples of great work being undertaken within the sector
4. **Assess effectiveness and impact of initiatives against strategic goals:** what the sector is doing currently, including what is working well, and where are the areas for improvement? Examine qualitative and quantitative information (including SARdonyx).
5. **Identify gaps and opportunities for future development:** each area has its own summary of recommendations and considerations, as part of the over-arching conclusions and recommendations contained at the end of the report.

OUTPUT: PREVENTION AND PREPAREDNESS REPORT

PART TWO:

6. **Present and implement findings:** consider both high-level strategic and operational and actionable findings. Establish action teams.

OUTPUT: PREVENTION AND PREPAREDNESS ACTION PLAN



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