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School of Adventure Studies



**AAIAC**  
Adventure Activities  
Industry Advisory Committee

# COLLECTIVE KNOWLEDGE

Evidencing the practice that keeps people safe

Phase 1 Report – testing the process of an incident-reporting system

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# About the Team

## Collective Knowledge Working Group

This working group is based out of AAIAC and consists of Jo Barnett (IOL), Steve Woods (Vertex Training), and Peter White (UHI NWH).

Peter is the lead researcher for this report and is currently employed as a Lecturer and Instructor at the School of Adventure Studies in Fort William. He is involved in teaching Adventure Education and Adventure Tourism Management students, is a course provider for a range of British Canoeing courses, and has published work around professional identity and working in the outdoors.

## University of the Highlands and Islands, North, West and Hebrides

Based in the Fort William campus is the School of Adventure Studies, which hosts a range of one year courses, undergraduate degree and postgraduate programmes in the tourism, adventure and marine sectors.

## Institute for Outdoor Learning

The IOL is the professional body for organisations and individuals who use the outdoors to make a positive difference to others. Members have a shared vision of Outdoor Learning as a highly valued form of development, education and employment in UK society.

## Adventure Activities Industry Advisory Committee

AAIAC is the sector's lead body for safety in adventure activities. It is representative of a wide range of stakeholders from the UK adventure activities sector and is supported by the Institute for Outdoor Learning. It takes on the following roles;

- Safety Accreditation: taking a coordinating role in safety accreditation of adventurous activity and managing, developing and growing Adventuremark.
- Representation: being a single point of contact for Government and other agencies in the areas of safety, risk management and good practice.
- Guidance: being a single point of contact for all stakeholders, sharing good practice, developing standards and guidance.

# Acknowledgements

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# Summary

This report is the conclusion of Phase 1 of the project ‘Collective Knowledge – Evidencing the practice that keeps people safe’. The overall aim is to provide structure and opportunities for mediating knowledge creation in activity safety within the UK outdoor adventurous activities sector. The focus of the project will be on collecting, curating and communicating the collective knowledge of individuals and organisations within the sector.

The overall project will consist of multiple phases. The intention is for these to progress in sequential order of the following;

**Collection** – there needs to be an awareness and understanding of what current trends and themes are evident across the sector. Therefore, a sector-wide incident-reporting form will be developed to allow the collection and analysis of this data.

**Curation** – the information and knowledge collected needs to be stored and displayed in a useful and accessible way. Therefore, a website or webpage will be developed to become an appropriate repository that can become a reference point for providers and individuals.

**Communication** – the collecting and curating of safety and risk management data will have less impact if it is not shared widely and effectively. Therefore, we will look at new ways of consistently communicating common themes and trends across the sector (eg. publicity, e-bulletins etc.).

To trial a sector-wide incident-reporting system (Collection) we need to ensure that this will capture what we need, and is appropriate for the organisations that will participate. Therefore this first phase is to **test the process of an incident-reporting system**.

The specific **objectives** will be used;

- Explore and identify the key information required in an incident-reporting system, that uncovers content needed for collective knowledge to be formed.
- Evaluate its usability for participant organisations and providers.
- Identify any potential ways that individuals or organisations could be identified within the data collected, to ensure anonymity for participants.
- Analyse the data at the end, identifying any gaps that can be altered in the final incident-reporting system.

# Key Recommendations

**Recommendation 1:** A decision on the purpose and use of the categorised versus descriptive information. A suggested option would be all information to be categorised, with an optional part that would include descriptive information if the organisation thought it was a useful case-study to share.

**Recommendation 2:** Continue to include Contributory Factors with some further adjustments to the specific factors. Develop relevant guidance and training material to help support organisations in their understanding of them. Consideration should be given to who completes the form (discussed further down in Recommendation 5).

**Recommendation 3:** Review the Severity Rating scale to consider it being expanded, giving greater nuance in the lower end of the scale.

**Recommendation 4:** Reword the 'How have you changed your practice' question to encourage more responses that may be helpful in sharing widely within the sector.

**Recommendation 5:** Consider who should ideally fill out the form as this will affect how we adjust the length, content and platform used.

**Recommendation 6:** Investigate the potential for developing our own platform that can be used for reporting of incidents and near misses.

**Recommendation 7:** Categorise the 'Location' and 'Activity' questions with a wide range of options.

**Recommendation 8:** Investigate the legal ramifications of organisations submitted data and the potential of whether data can be requested at a later date.

Recommendation 9: Define the scope and boundaries of the project to allow consistent and reliable data collection. Specifically in relation to the type of reports, type of organisations and whether to include 'free time' incidents.

Recommendation 10: Key sector stakeholders should be communicated with and brought into the project where possible. Consideration should be given to how to continue to manage the project alongside these stakeholders.

Recommendation 11: The 'Collective Knowledge Project' should continue to be developed, with the aim of preventing future incidents, supporting the diverse sector, and encouraging the development of frontline practitioners.



# Introduction

Outdoor adventure activities take place in a wide range of environments and conditions, ranging from indoor climbing walls to remote mountain areas. These activities all contain inherent levels of risk, often related to both the environment they are in alongside the type of activity being conducted. The purpose behind these activities has traditionally stemmed from outdoor education with young people but has spread to other areas such as adventure sports coaching and adventure tourism (Humberstone, Prince, & Henderson, 2016).

Safety and risk management within the UK outdoor sector changed dramatically after the 1993 Lyme Bay tragedy. The deaths of four young teenagers whilst kayaking on the coast prompted government regulation with The Activity Centres (Young Persons' Safety) Act 1995, which led to the Adventure Activities Licencing Regulations 1996 and the creation of the Adventure Activities Licencing Authority (AALA) (see Chapter Two, Fullbrook, 2016). Whilst the licencing scheme may appear all encompassing, it has some significant exclusions – both in terms of activities and providers who are exempt from its coverage. Whilst not necessarily directly related to this, there has continued to be the sad reality of fatalities in participation of outdoor adventurous activities in the UK (e.g. Stainforth Beck, Glenridding Beck, Grey Mare's Tail, Haverford West and most recently the Great Orme).

There has been an enduring emphasis upon safety and risk management within the outdoor literature (e.g. Priest, & Gass, 2005; Martin et al., 2017; Berry, & Hodgson, 2011). This has been delved into more deeply in texts such as 'Safety, risk and adventure in outdoor activities' (Barton, 2008), which uses personal experience as a basis for working through all the variables related to safety and risk management. Throughout this literature the themes of learning from incidents and near misses are present, with the purpose of preventing serious incidents or fatalities.

There has been substantial work recently on the development of a systems approach to incident reporting in led outdoor activities (LOA) in Australia (Salmon et al., 2017). Following the work of Rasmussen's risk management framework (Rasmussen, 1997), they have suggested that they are able to identify a range of actors and subsequent contributory factors to incidents (Salmon et al., 2010). These actors include higher-level dimensions such as government policy and regulatory bodies, alongside the more 'traditional' dimensions of instructor/participants and equipment/surroundings (Salmon et al., 2017). This has led to the development in 2014 of the Understanding and Preventing Led Outdoor Accidents Data System (UPLOADS) that aims to help LOA providers to better understand incidents that occur and improve safety within the sector (McLean et

al., 2022). The UPLOADS project is still active and produces an annual report with summary data of incidents from the past year (UPLOADS, 2023).

A slightly different perspective has also come out of Australia, along the lines of fatality aversion (Brookes, 2018). Their premise is that most accidental deaths in outdoor education are not normally caused by misfortune, but normally involve ‘failures to learn from the past’ (Brookes, 2018, p. 1). They suggest a three-legged stool for fatality prevention; (1) strict aversion to fatal incidents, (2) knowledge of environmental hazards, and (3) knowledge of fatal incidents. This approach supports the role of incident reporting in adventurous activities, but differs from the systems approach discussed previously which directs attention away from practical prevention – and potentially reduces personal responsibility of the instructor (for a fuller account, see Brookes, 2018, p. 210).

A potentially helpful perspective of incident reporting systems, is as collective knowledge management (Maslen & Hayes, 2016). Whilst not being in the context of adventurous activities, they explore how organisations are able to connect ‘relevant information to individuals and groups in order to prevent rare but catastrophic events’ (2016, p. 1257). They suggest that firstly the emphasis should be on knowledge rather than learning within incident prevention, as learning can confine us to the data collected and used in reporting systems – whereas using knowledge as its reference point draws us back to what we need to know and communicate to prevent catastrophic incidents. This is built upon the work of Hecker (2012) and his work on collective knowledge and its three aspects; (1) collective knowledge as shared knowledge, (2) collective knowledge as complementary knowledge, and (3) collective knowledge as knowledge embedded in collective artifacts. Incident reporting systems fit within as collective artifacts, but the key is how they work to mediate and synchronize the shared and complementary knowledge between individuals and groups. This can be achieved only through the social practices between people, and ‘without this, information collected in incident-reporting systems cannot hope to achieve the goal of connecting relevant information about the potential for a [serious incident] to individuals and groups’ (Maslen & Hayes, 2016, p. 1257).

The concept of Incident reporting is clearly well-established within adventurous activities (Barton, 2008). Within the UK most National Governing Bodies operate their own incident reporting schemes (BMC, 2023; British Canoeing, 2023a; RYA, 2023). Some of these result in case studies being published (British Canoeing, 2023b) or annual reports summarising the past years incidents (British Cave Rescue Council, 2023). Whilst this is all positive and there are clear obligations in place for providers, there is still a disjointed approach within the sector to overall incident trends and ensuring good practice (collective knowledge) is adopted by all providers (see Haverford West, MAIB, 2022).

The sector itself has evolved considerably in the past 30 years, with the perception of significant progression and improvement in safety and risk management. But with an increasingly diverse sector, fixed legislation and a changing workforce, there is scope for improvement in our current frameworks. This is to ensure that knowledge and lessons from previous incidents are not forgotten and are retained to help support the workforce and organisations of tomorrow.

Therefore the intention of this project is to connect relevant information to individuals and providers in the sector to (1) reduce incidents, (2) improve quality of provision, and (3) support individuals/providers development through encouraging a greater understanding of safety and risk management. This project is attempting to encourage a viewpoint of seeing knowledge as something that is held and used by individuals/providers, rather than understanding knowledge as information stored and accumulated in databases.

The development of this project will also enable the sector to identify relevant statistics regarding incident levels in relation to participation. This will continue to support the position of the sector as a significant contributor to areas such as education, recreation, tourism and health and wellbeing.

# Methodology

This research set out to test the process of a sector-wide incident reporting system, to ensure its accuracy, validity and usability. It aimed to do this through utilising a deductive research process (Clark et al., 2021), by asking participants to input any incident related forms they had from 1<sup>st</sup> May 2023 to 30<sup>th</sup> July 2023. This was then analysed against their Participant Activity Days throughout the same time period, and was completed with a final evaluation form to feedback on the whole process. Gathering this data in one large block would allow the researcher to answer the various study objectives in an effective manner. The research also gained ethical approval from the University of the Highlands and Islands before recruitment of participants.

The participant organisations (known as participants) were recruited through purposive sampling (Clark et al., 2021), using the key characteristics of being a provider of outdoor adventurous activities, and having their own incident recording process. The intention was to recruit approximately 10 participants, that covered a mixture of provision, organisational size and mode of governance. We identified 15 different organisations, of which 9 agreed to participate. Of those only 7 managed to complete the forms in time, with only 6 completing the final evaluation of the project. Of those 6 participants there was the following breakdown of characteristics (Table 1).

<b>Breakdown of Participant Characteristics</b>		
<b>Type of Provision/Activities</b>	Outdoor Adventure Education	50%
	Adventure Activities	17%
	Adventure Tourism	17%
	Outdoor Learning	17%
<b>Number of Sites</b>	Single Site	50%
	Multi Site	50%
<b>Type of Provider</b>	Charity	33%
	Commercial	50%
	Local Authority	17%
<b>Mode of Provision</b>	Residential	50%
	Non-Residential	50%

Table 1. Breakdown of participant characteristics

The participants were asked to complete the following three online forms, using Jisc Online Surveys;

1. Incident Report Form (Appendix 1) – this was to be completed for each individual report they had over the time period. For some participants this may have only been one or two, whilst

others had significantly more. The participants were also given Guidance Notes (Appendix 2) to assist them in providing the right details.

2. Participant Activity Days – this was only to be completed once, and detailed the total number of participant activity days that the participant provided throughout the time period. It was broken down into weekly segments.
3. Final Evaluation – this was only to be completed once, and covered elements about the participants as well as their experience and thoughts on the incident reporting form.

The Incident Report Form was a key aspect the research. It was initially developed through discussion with members of the Collective Knowledge Working Group along with reviewing other work-based incident report forms and the IRATA Work and Safety Analysis Reports (2023). The contributory factor section was based upon components of the UPLOADS contributory factor classification scheme and framework (McLean et al., 2022; see Figure 1).

<b>Governance, Education &amp; Regulation</b>	<b>Local Government</b> N1 Auditing N2 Communication N3 Budget N4 Facilities N5 Policies/procedures	<b>Regulators/Associations</b> M1 Accreditation M2 Auditing M3 Communication M4 Knowledge M5 Budget M6 Standards	<b>LOA Education</b> L1 Communication L2 Curriculum L3 Budget	<b>State/Federal Government</b> O1 Communication O2 Funding O3 Infrastructure/land management O4 Policies O5 Legislation
	<b>Clients</b>	<b>Parents/Carers</b> J1 Communication J2 Decisions J3 Knowledge J4 Preparation	<b>Schools/Clients</b> K1 Communication K2 Compliance K3 Decisions K4 Knowledge K5 Preparation K6 Policies/procedures K7 Teacher ratio	
<b>LOA Planning, Supervision &amp; Management</b>	<b>Activity / Program Design</b> H1 Location H2 Scheduling H3 Suitability H4 Supervisor ratio H5 Resourcing	<b>Management &amp; Supervision</b> I1 Communication I2 Compliance I3 Culture I4 Decisions I5 Budget I6 Knowledge I7 Policies/procedures I8 Risk management I9 Staffing I10 Training I11 Supervision		
	<b>People directly involved in the incident</b>	<b>Activity Leader</b> C1 Attitudes C2 Communication C3 Compliance C4 Decisions C5 Experience C6 Knowledge C7 Mental/Physical C8 Preparation	<b>Activity Participant</b> D1 Attitudes D2 Communication D3 Compliance D4 Decisions D5 Experience D6 Knowledge D7 Mental/Physical D8 Preparation	<b>Supervisors</b> E1 Attitudes E2 Communication E3 Compliance E4 Decisions E5 Experience E6 Knowledge E7 Mental/Physical E8 Preparation
<b>Activity Resources &amp; Environment</b>	<b>Group</b> F1 Composition F2 Peer interactions F3 Teamwork F4 Group size F5 Timing	<b>Other People in Activity Environment</b> G1 Attitudes G2 Communication G3 Compliance G4 Decisions G5 Experience G6 Knowledge G7 Mental/Physical G8 Preparation		
	<b>Resources</b> A1 Equipment/clothing A2 Documentation A3 Food/drink A4 Medication	<b>Environment</b> B1 Animals/insects B2 Facilities B3 Terrain B4 Trees/vegetation B5 Water B6 Weather		

Figure 1. UPLOADS contributory factor classification scheme and framework (McLean et al., 2022, based on Goode et al., 2017).

This includes 5 high level categories, 15 system level categories and 93 descriptor level categories. In their development of this classification framework it was found that it was difficult to achieve high levels of reliability with greater numbers of categories (Goode, Salmon, Taylor, Lenne, & Finch, 2017, p. 23). Taking these issues into account along with a desire to make the form short enough, meant we removed the highest two levels (Governance, Education & Regulation, and Clients), and amalgamated the remaining system and descriptor categories into the following (Table 2).

<b>System Level Category (n5)</b>	<b>Descriptor Level Category (n28)</b>
<b>Responsible People</b>	<ul style="list-style-type: none"> <li>- Experience</li> <li>- Decision Making</li> <li>- Knowledge</li> <li>- Communication</li> <li>- Preparation</li> <li>- Awareness</li> <li>- Fatigue</li> <li>- Other</li> </ul>
<b>Other People</b>	<ul style="list-style-type: none"> <li>- Experience</li> <li>- Communication</li> <li>- Preparation</li> <li>- Awareness</li> <li>- Other</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>- Weather</li> <li>- Conditions underfoot / on water</li> <li>- Appropriateness for group</li> <li>- Other</li> </ul>
<b>Equipment</b>	<ul style="list-style-type: none"> <li>- Appropriateness for group</li> <li>- Used correctly</li> <li>- Other</li> </ul>
<b>Organisational</b>	<ul style="list-style-type: none"> <li>- Staff ratios</li> <li>- Training of staff</li> <li>- Supervision / Monitoring of staff</li> <li>- Programme design</li> <li>- Organisational culture</li> <li>- Organisational communication</li> <li>- Risk management, policies and procedures</li> <li>- Other</li> </ul>

Table 2. Collective Knowledge Contributory Factors

The data was all analysed using Microsoft Excel, with the aim to explore different ways of depicting the data. The data collected was mostly analysed as descriptive statistics (Foster et al., 2015), with some aspects of simple comparison between factors (eg. Reports vs Participant Activity Days).

# Analysis of Data

The analysis is based upon data submitted by 7 participant organisations. There was a total of 119 submissions to the Incident Report Form (titled 'Collective Knowledge – Collection Phase 1a'). A total of 10 of these fell outside the date requirements (1<sup>st</sup> May to 30<sup>th</sup> July 2023) and were therefore excluded from the analysis. Therefore the following findings are based upon 109 incident report submissions.

## Participant Activity Days

Organisations were asked to submit their total participant activity days for the same time period – 1<sup>st</sup> May to 30<sup>th</sup> July. A single participant activity day is one group member for one day's activity – therefore a group of 10 for 3.5 days activities would be 35 participant activity days.

Totals for each organisation ranged between 16 and 13,369 with a mean of 3,519.

The data below (Table 3 & Figure 2) shows a steady increase in participation from the 1<sup>st</sup> May, with a sharp increase between 5<sup>th</sup> June and 2<sup>nd</sup> July. At the end of the period it had reduced to similar levels found at the start.

	<b>WEEK COMMENCING</b>	<b>ACTUAL</b>	<b>PERCENTAGE</b>	<b>CUMULATIVE PERCENTAGE</b>
<b>WEEK 1</b>	1st May	1223	4.96%	4.96%
<b>WEEK 2</b>	8th May	1381	5.61%	10.57%
<b>WEEK 3</b>	15th May	1987	8.07%	18.64%
<b>WEEK 4</b>	22nd May	1923	7.81%	26.44%
<b>WEEK 5</b>	29th May	1744	7.08%	33.52%
<b>WEEK 6</b>	5th June	2557	10.38%	43.90%
<b>WEEK 7</b>	12th June	2387	9.69%	53.59%
<b>WEEK 8</b>	19th June	2566	10.42%	64.01%
<b>WEEK 9</b>	26th June	2368	9.61%	73.62%
<b>WEEK 10</b>	3rd July	1733	7.03%	80.65%
<b>WEEK 11</b>	10th July	1729.5	7.02%	87.67%
<b>WEEK 12</b>	17th July	1653	6.71%	94.38%
<b>WEEK 13</b>	24th July	1383.5	5.62%	100.00%
<b>TOTALS</b>		<b>24635</b>	<b>100.00%</b>	<b>100.00%</b>

Table 3. Participant Activity Days

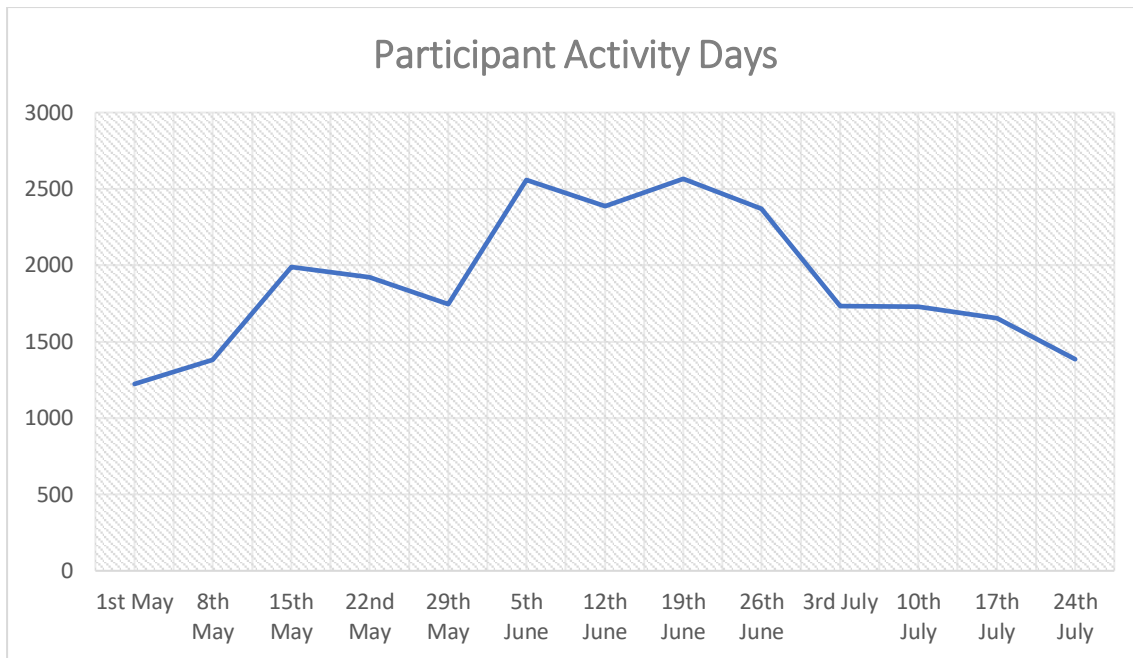


Figure 2. Participant Activity Days

## Incident Report Form

### Type of Report (Question 2)

The three classifications and descriptions of reports available were;

*Incident* – classed as any event (planned or unplanned) that has occurred which has caused harm (physical, emotional, psychological etc.) to individuals.

*Near Miss* – classed as an event or sequence of events that could have led to harm towards individuals.

*Safety Observation* – classed as anything else that doesn't fit in the Incident / Near Miss categories, and would be useful information to record and/or share.

The number of organisations that submitted different types of reports varied below;

- Incident – 5 organisations
- Near Miss – 3 organisations
- Safety Observation – 1 organisation



TYPE OF REPORT	NUMBER	PERCENTAGE	CUMULATIVE PERCENTAGE
INCIDENT REPORT	73	66.97%	66.97%
NEAR MISS	12	11.01%	77.98%
SAFETY OBSERVATION	24	22.02%	100.00%
<b>TOTALS</b>	<b>109</b>	<b>100.00%</b>	<b>100.00%</b>

Table 4. Type of Reports

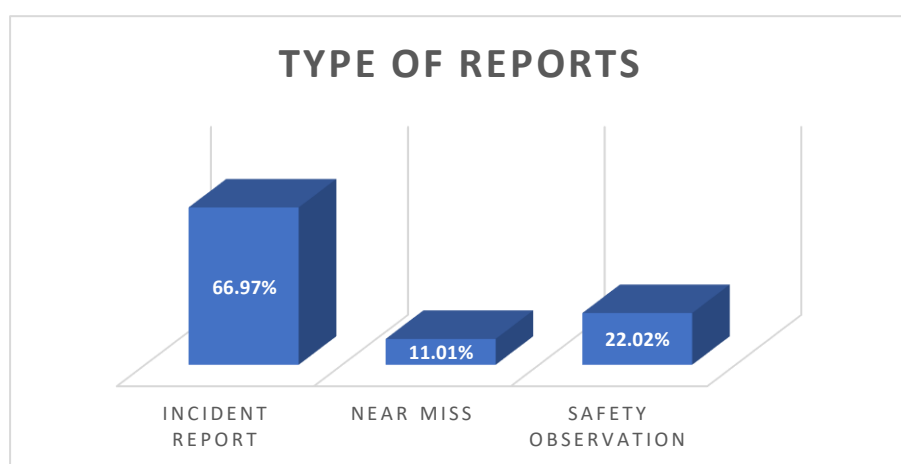


Figure 3. Type of Reports

### Date of Report (Question 3)

The dates of reports were grouped into each week that Participant Activity Days were grouped (see Table 5 and Figure 4).

Figure 5 shows the breakdown of each type of report per week, and Figure 6 shows the percentage of reports per week against the number of Participant Activity Days per week.

	WEEK COMMENCING	FREQUENCY	PERCENTAGE	CUMULATIVE PERCENTAGE
WEEK 1	1st May	8	7.34%	7.34%
WEEK 2	8th May	5	4.59%	11.93%
WEEK 3	15th May	16	14.68%	26.61%
WEEK 4	22nd May	4	3.67%	30.28%
WEEK 5	29th May	16	14.68%	44.95%
WEEK 6	5th June	2	1.83%	46.79%
WEEK 7	12th June	10	9.17%	55.96%
WEEK 8	19th June	10	9.17%	65.14%
WEEK 9	26th June	1	0.92%	66.06%
WEEK 10	3rd July	7	6.42%	72.48%
WEEK 11	10th July	16	14.68%	87.16%
WEEK 12	17th July	10	9.17%	96.33%
WEEK 13	24th July	4	3.67%	100.00%
<b>TOTAL</b>		<b>109</b>	<b>100.00%</b>	<b>100.00%</b>

Table 5. Summary Date of Reports

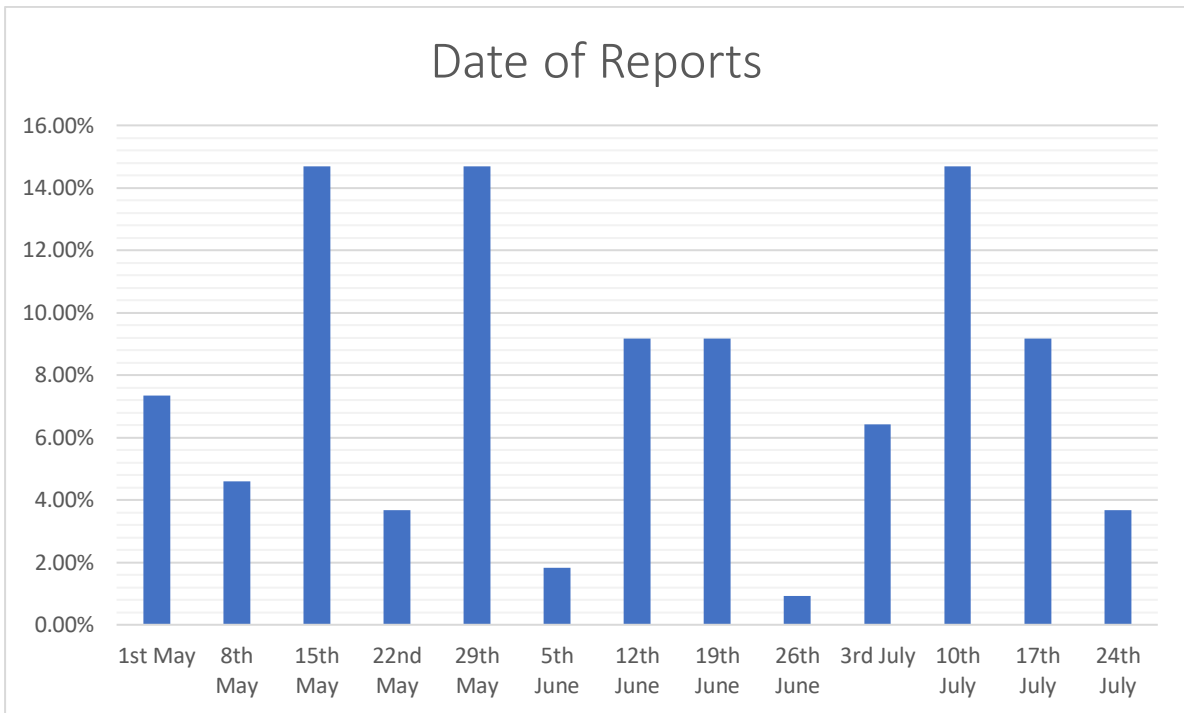


Figure 4. Number of Reports per Week

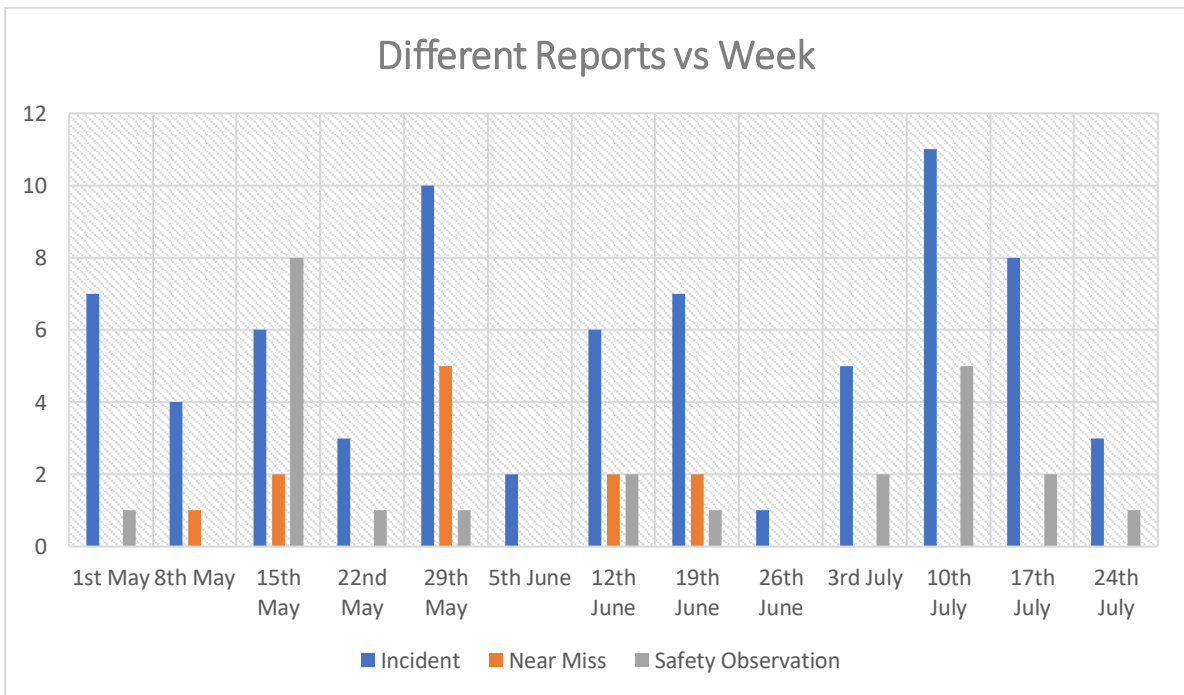


Figure 5. Different types of reports per week

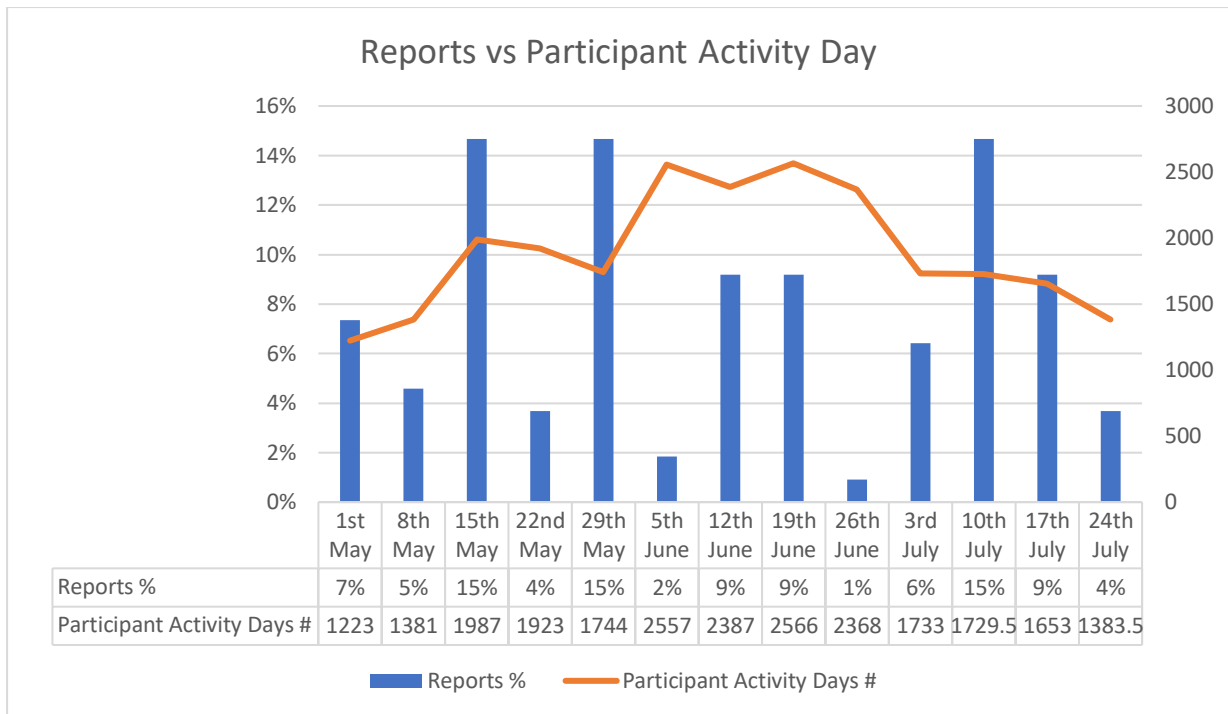


Figure 6. Percentage of reports per week vs Number of Participant Activity Days

#### Location (Question 4)

Participants were able to enter the location of the report manually. This meant there was a wide range of responses, with some being specific enough that you could potentially identify the participant.

Some generic examples of the descriptions were; climbing wall, centre grounds, on-site climbing wall, open water loch, residential centre, shoreline, zip wire.

The 109 entries were classified into 9 different categories, as shown below in Table 6 & Figure 7.

LOCATION	NUMBER	PERCENTAGE
CENTRE	47	43%
CLIMBING CRAG	1	1%
CLIMBING ON-SITE	18	17%
LAND	8	7%
MOUNTAIN BIKE TRAIL CENTRE	5	5%
ON-SITE ACTIVITIES	10	9%
ROAD	2	2%
UNKNOWN	2	2%
WATER	16	15%
<b>TOTAL</b>	<b>109</b>	<b>100%</b>

Table 6. Classification of locations

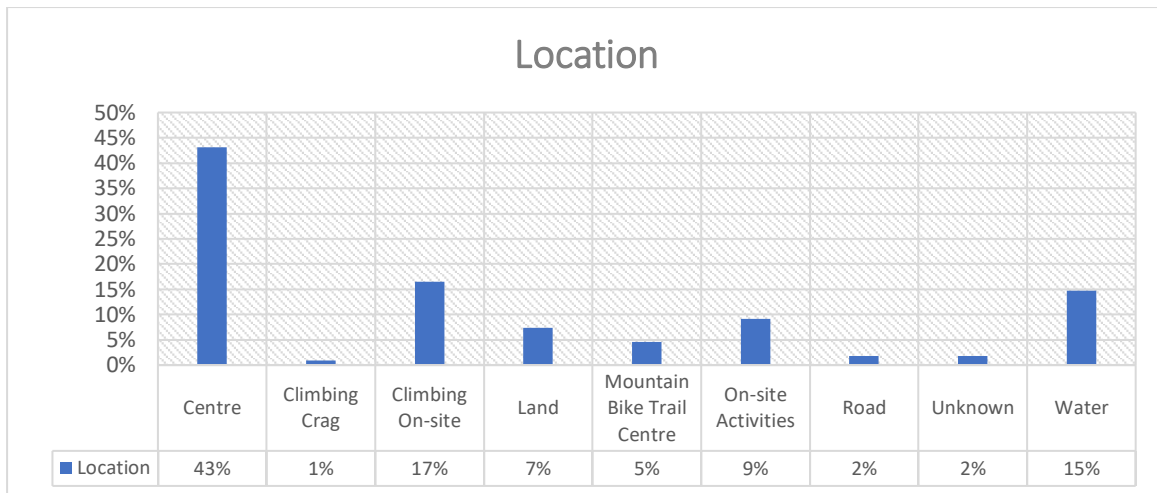


Figure 7. Classification of locations

### Activity (Question 5)

Participants were able to enter the activity of the report manually. This also meant there was a wide range of responses, with some being specific enough that you could potentially identify the participant. Each participant also has slightly different ways of describing the same thing, which meant that it was sometimes difficult to know which category their activity fitted within.

With this in mind, the 109 entries were classified into 19 different categories, as shown below in Table 7 and Figure 8.

ACTIVITY	FREQUENCY	PERCENTAGE
ARCHERY	2	2%
WALKING	4	4%
CAMPING	7	6%
CANOEING	7	6%
CAVING	1	1%
TEAM/CHALLENGE ACTIVITIES	5	5%
CLIMBING	10	9%
FREE TIME	37	34%
GORGE WALKING	3	3%
ROPES COURSE (HIGH)	9	8%
KAYAKING	2	2%
BIKING	1	1%
MOUNTAIN BIKING	4	4%
ORIENTEERING	1	1%
RAFT BUILDING	1	1%
ROWING	3	3%
SCRAMBLING	1	1%
ZIP LINE	3	3%
OTHER	8	7%
<b>TOTAL</b>	<b>109</b>	<b>100%</b>

Table 7. Classification of activities

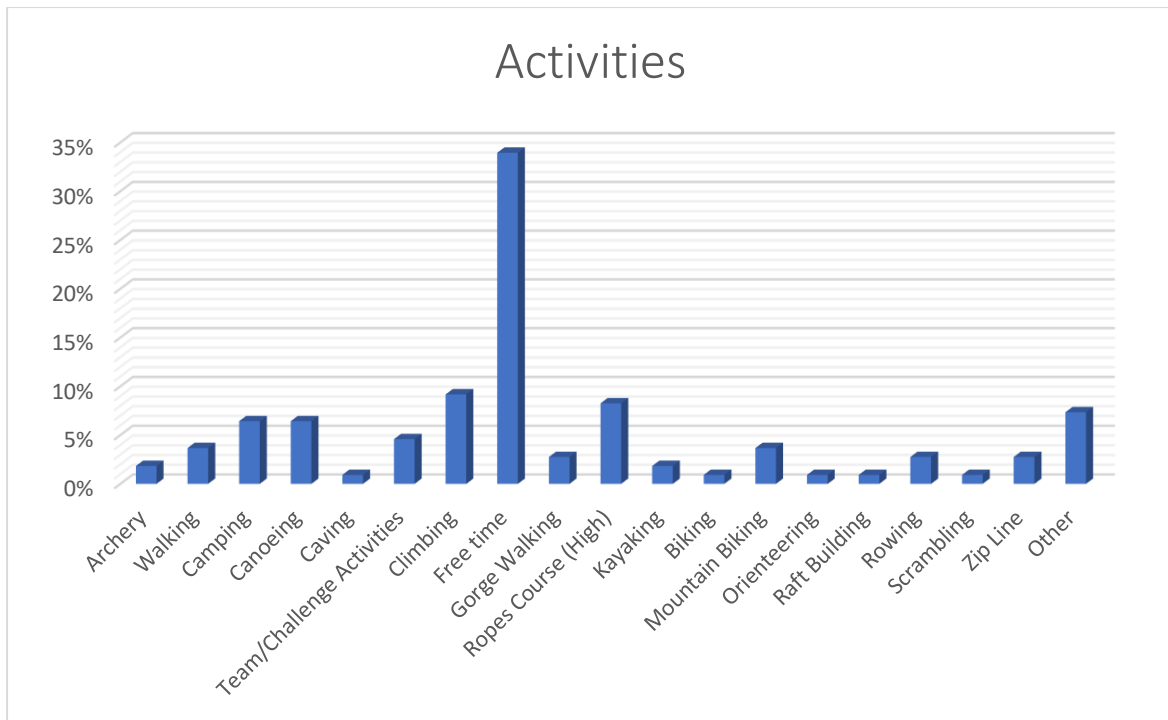


Figure 8. Classification of activities

### Summary of Incident (Question 6)

Participants were able to enter the summary of the report manually, which they were asked to describe in very brief terms the nature of the report.

These all generally fitted within the criteria, and ranged from examples such as ‘falling over’ to ‘group member slipped and hit their hand’. Some reports contained slightly additional detail, and this often overlapped with Question 13 ‘Brief narrative of the facts and events that took place’.

They all required additional context to be useful, as read in isolation they all meant very little. Some times participants used acronyms or shorthand for certain names or roles, which also meant it was unclear what they actually meant.

### Were there any physical injuries or medical concerns? (Question 7)

This was a simple Yes/No question. If it was ‘No’, then they went straight to Question 12 ‘Age bracket of affected individuals’.

Table 8 shows the different responses.

RESPONSE	NUMBER	PERCENTAGE
YES	53	48.62%
NO	56	51.38%
<b>TOTAL</b>	<b>109</b>	<b>100.00%</b>

Table 8. Any physical injuries or medical concerns

### Area of physical injury (Question 8)

This question was available to the 53 responses that selected Yes to Question 7. They were able to select multiple options if needed. Table 9 and Figure 9 show the overall results, and Table 10 shows the split between 1 or 2 areas of injury.

AREA	FREQUENCY	PERCENTAGE
ARM	11	19.6%
BACK	0	0.0%
CHEST/TORSO	2	3.6%
FACE/EYE	3	5.4%
FOOT/ANKLE	9	16.1%
HAND/FINGERS	13	23.2%
HEAD	7	12.5%
LEG	10	17.9%
NECK/SHOULDER	1	1.8%
<b>TOTAL</b>	<b>56</b>	<b>100.00%</b>

Table 9. Area of physical injury

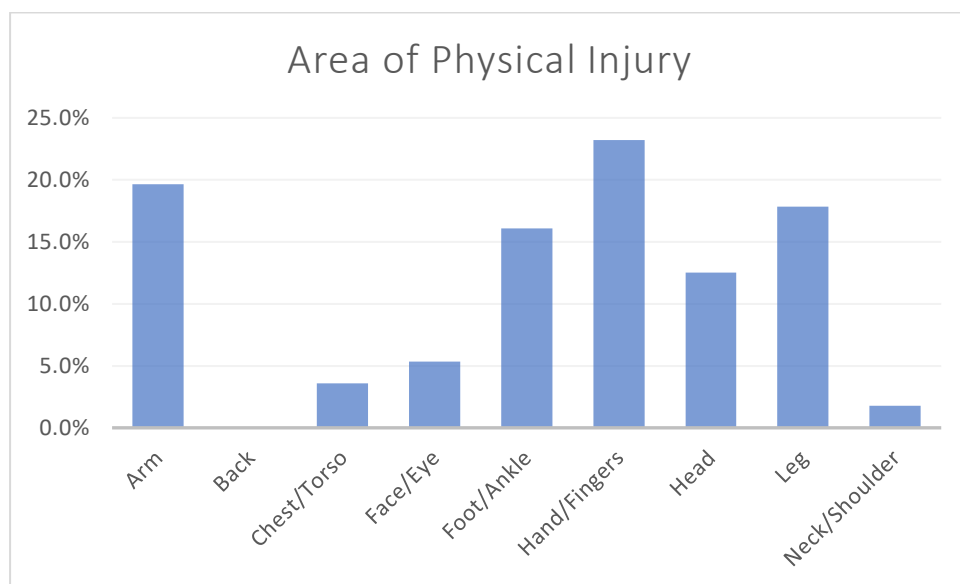


Figure 9. Area of physical injury

DESCRIPTION	NUMBER	PERCENTAGE
ONE AREA OF INJURY	48	92.3%
TWO AREAS OF INJURY	4	7.7%
<b>TOTAL</b>	<b>52</b>	<b>100.0%</b>

Table 10. One or two areas of injury

### Nature of Injury (Question 9)

This question was available to the 53 responses that selected Yes to Question 7. There was a total of 19 options they could have selected, with 8 options not selected at all (Amputation, Asphyxiation, Bite/Sting, Crush, Electrical Shock, Loss of consciousness, Loss of sight and Psychological distress). In the survey design, they were only able to select one option. This may have affected the selection as some incidents may have involved different types of injury.

DESCRIPTION	NUMBER	PERCENTAGE
ABRASION	4	7.5%
BRUISE / BUMP	16	30.2%
BURN / SCALD	2	3.8%
CUT / LACERATION	12	22.6%
DISLOCATION	1	1.9%
FIRST AID ADMINISTERED	4	7.5%
FRACTURE	3	5.7%
INTERNAL INJURY	1	1.9%
OTHER INJURY	7	13.2%
PUNCTURE	1	1.9%
STRAIN / SPRAIN	2	3.8%
<b>TOTAL</b>	<b>53</b>	<b>100.0%</b>

Table 11. Nature of injury

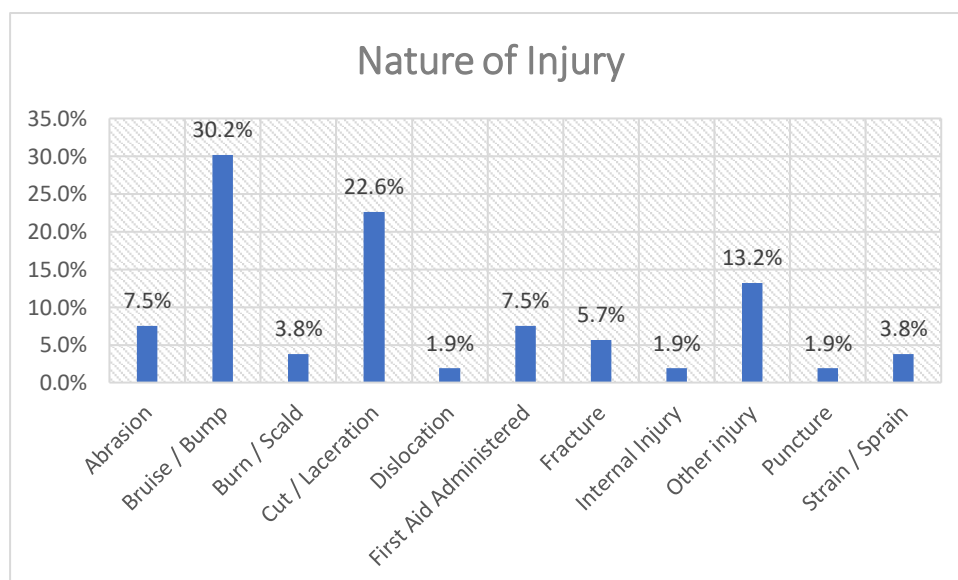


Figure 10. Nature of injury

### Medical Concerns (Question 10)

This question was available to the 53 responses that selected Yes to Question 7. It only gathered 7 responses from the 53 that could have selected it.

DESCRIPTION	NUMBER	PERCENTAGE
COLD INJURIES	1	14.3%
HEAT INJURIES	0	0.0%
ASTHMA	0	0.0%
PRE-EXISTING MEDICAL CONDITIONS	6	85.7%
<b>TOTAL</b>	<b>7</b>	<b>100.0%</b>

Table 12. Medical concerns

### Did they require additional medical treatment? (Question 11)

This question was available to the 53 responses that selected Yes to Question 7. There was 1 non-response, with the remainder answering the question.

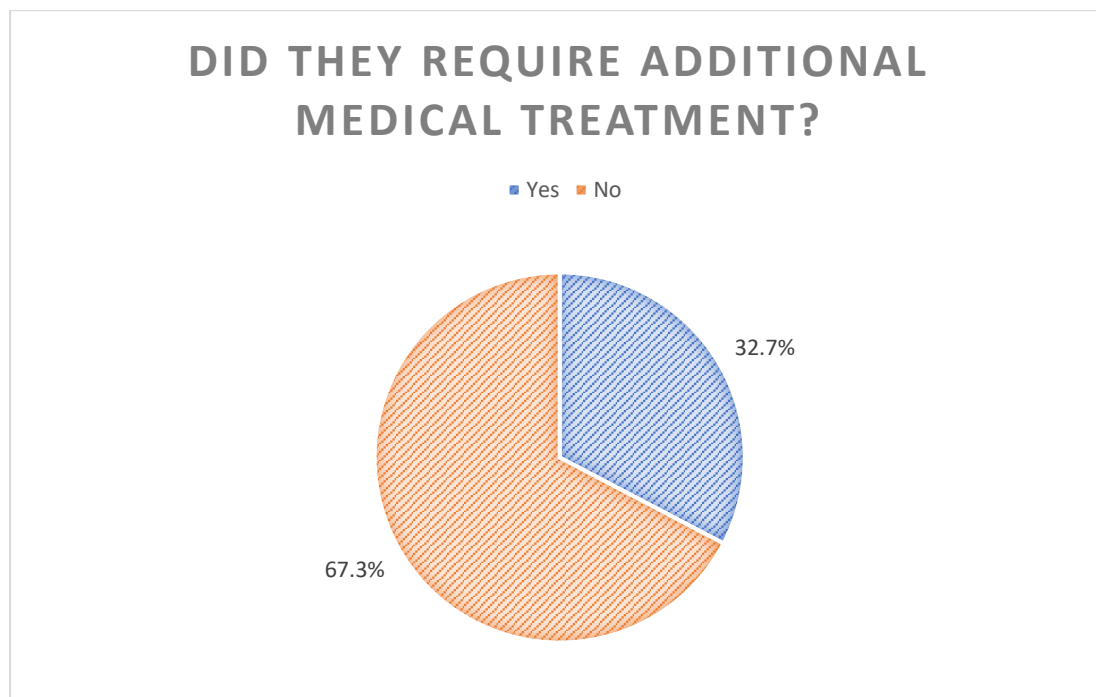


Figure 11. Requiring additional medical treatment



### Age bracket of affected individuals (Question 12)

The participants were able to select one of the below (Table 13) options for the age category.

The 6 entries for 'Other' varied by participant and type of report. Their commonality was that the reports didn't necessarily affect any one individual or group.

AGE	NUMBER	PERCENTAGE
PRIMARY	35	32%
SECONDARY	60	55%
ADULT	8	7%
OTHER	6	6%
<b>TOTAL</b>	<b>109</b>	<b>100%</b>

Table 13. Age of affected individuals

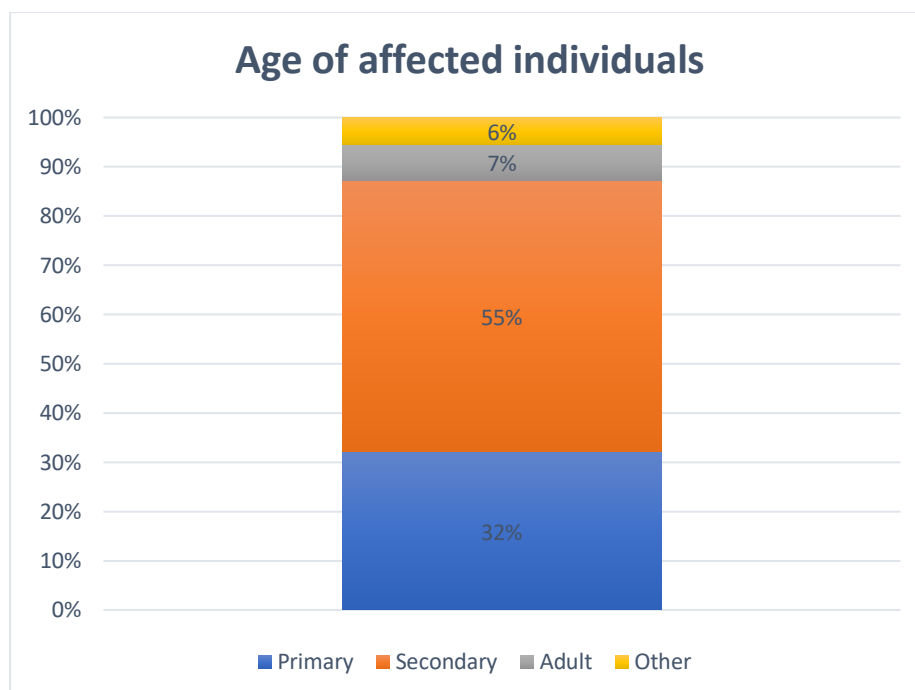


Figure 12. Age of affected individuals

### Brief narrative of the facts and events that took place (Question 13)

Participants were able to enter the narrative of facts and events of the report manually. They were asked to not use specific names for individuals, groups or locations – rather use generic titles for these things.

As mentioned before there was significant commonality with Question 6. They did vary in depth, with some entries only using 6 words compared to others using 138 words to describe the facts and events. This meant that some entries were easier to have a better understanding of than others.

All of the entries were best understood by looking at the responses to the other questions.

### Severity Rating of the Report (Question 14)

Participants could rate their report against one of the following;

*Low Significance* – whilst causing or had the potential to cause some form of harm to the individuals affected, there was little to no medical attention required, with no concern for long-term injury or damage.

*Medium Significance* – did or could have had the potential to cause reasonable harm to the individuals affected. Is it likely that medical attention would have been required, with some form of recovery needed.

*High Significance* – did or could have had the potential to cause life-threatening or life-altering injuries to the affected individuals.

LABEL	NUMBER	PERCENTAGE
LOW SIGNIFICANCE	98	90%
MEDIUM SIGNIFICANCE	11	10%
HIGH SIGNIFICANCE	0	0%
<b>TOTAL</b>	<b>109</b>	<b>100%</b>

Table 14. Severity Rating

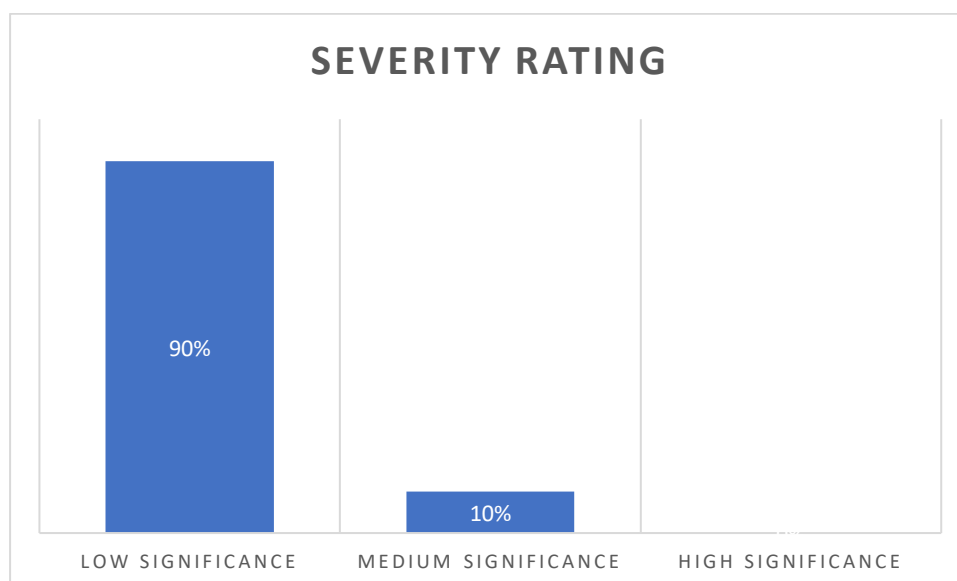


Figure 13. Severity Rating

## Contributory Factors

These were described as circumstances and conditions that were present in relation to the report. In isolation they may not have directly caused the incident/near miss, but collectively with other associated factors they will have increased the likelihood of it occurring. These were made up of 5 system level categories, and 28 descriptor level categories as seen below in Figure 14.

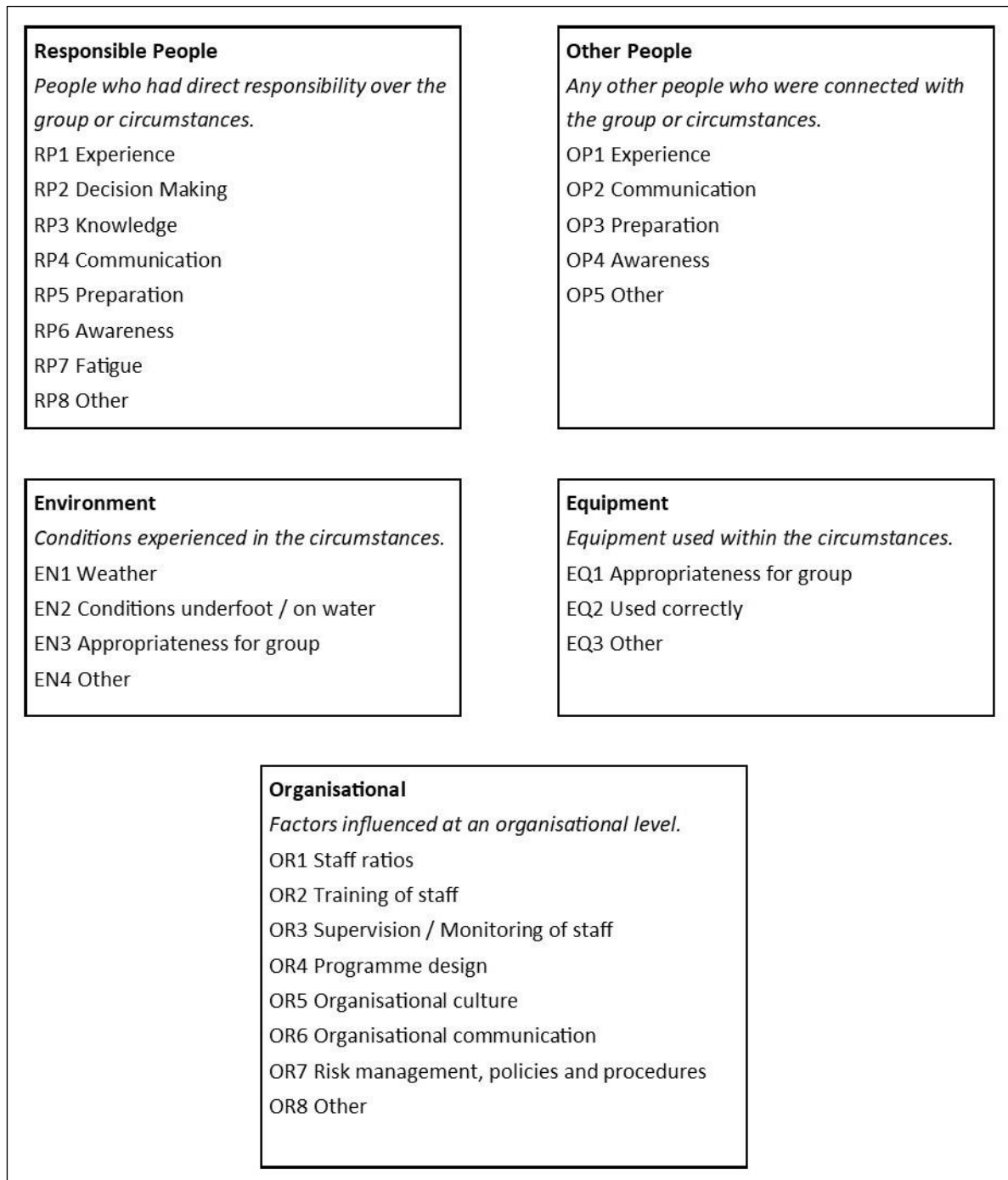


Figure 14. Contributory Factors, System and Descriptor Levels

Table 15 and Figure 15 below show the breakdown of reports that contained contributory factors, including the number they had selected. It is evident that 70% of reports did not have any selected. Figure 16 shows that split with just Incident Reports, and the figure doesn't change much (66% no, 34% yes).

NUMBER SELECTED WITHIN REPORTS	NUMBER OF REPORTS	PERCENTAGE
0	76	70%
1	15	14%
2	10	9%
3	4	4%
4	3	3%
5	0	0%
6	1	1%
<b>TOTAL</b>	<b>109</b>	<b>100%</b>

Table 15. Number of Contributory Factors in reports

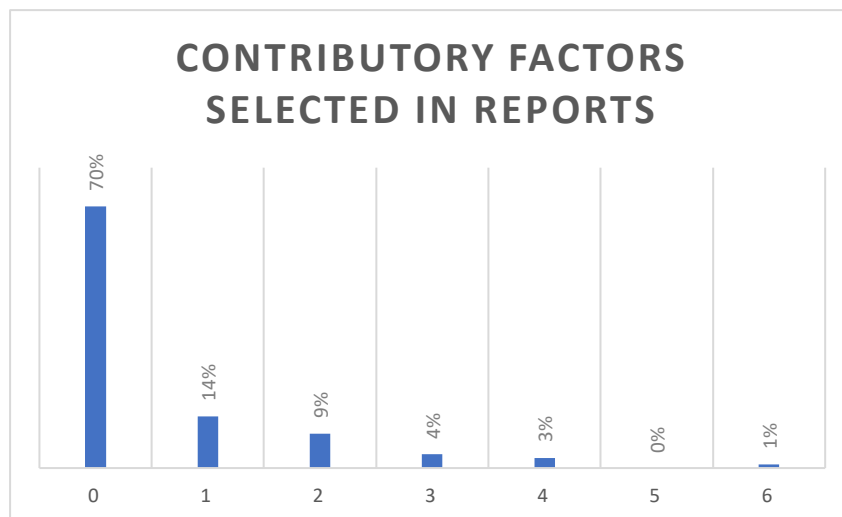


Figure 15. Number of Contributory Factors in reports

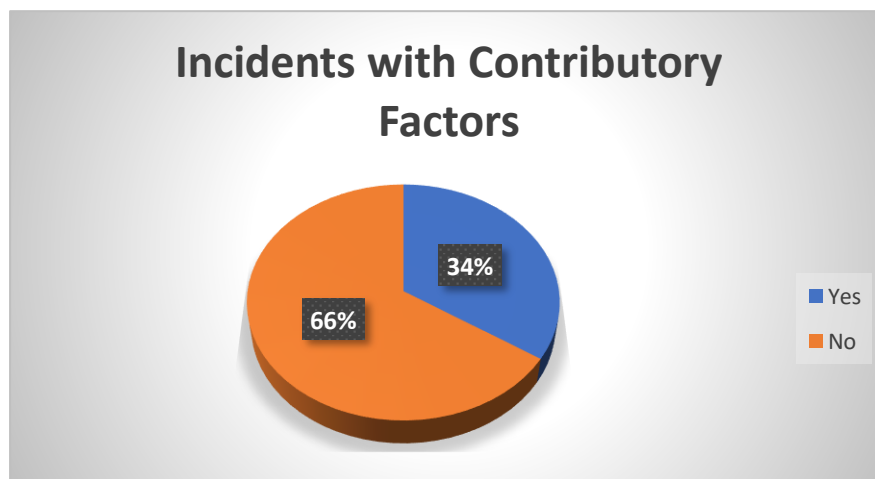


Figure 16. Number of Contributory Factors in Incident reports

### Responsible People (Question 15)

These were described as the people who had direct responsibility over the group or circumstances within the report. The table below shows the number of descriptor level categories selected for all the reports.

RESPONSIBLE PEOPLE	NUMBER	PERCENTAGE
EXPERIENCE	4	14%
DECISION MAKING	4	14%
KNOWLEDGE	5	18%
COMMUNICATION	4	14%
PREPARATION	2	7%
AWARENESS	7	25%
FATIGUE	0	0%
OTHER	2	7%
<b>TOTAL</b>	<b>28</b>	<b>100%</b>

Table 16. Responsible People



Figure 17. Responsible People

### Please give further details (Question 16)

This question was available to participants if they felt that adding further details around this specific contributory factor would be helpful in providing a fuller picture.

There were 21 entries for this question. A significant number of these responses were more in line with what lessons they had learnt from the incident and any changes they had made in response to that.

### Other People (Question 17)

These were described as any other people who were connected with the group or circumstances within the report. The table below shows the number of descriptor level categories selected for all the reports.

OTHER PEOPLE	NUMBER	PERCENTAGE
EXPERIENCE	1	7%
COMMUNICATION	0	0%
PREPARATION	3	21%
AWARENESS	7	50%
OTHER	3	21%
<b>TOTAL</b>	<b>14</b>	<b>100%</b>

Table 17. Other People

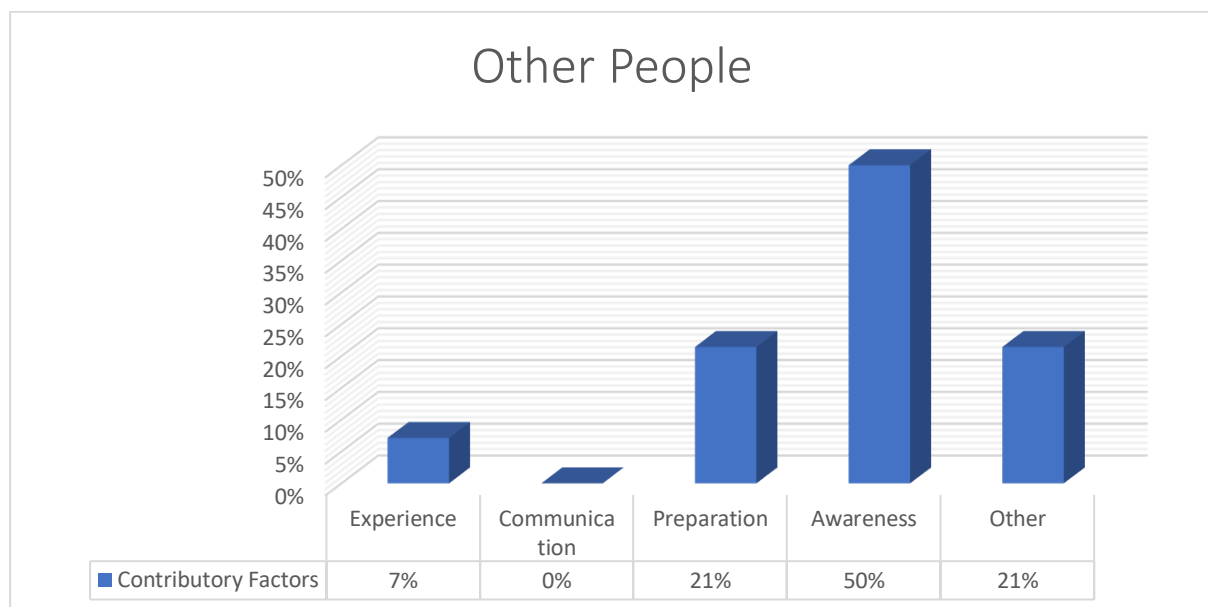


Figure 18. Other People

### Please give further details (Question 18)

This question was available to participants if they felt that adding further details around this specific contributory factor would be helpful in providing a fuller picture.

There were 14 entries for this question. Other potential categories to consider are;

- Attention
- Physical ability
- Age of participants
- Supervision from Group Leaders

### Environment (Question 19)

This was described as based on the conditions experienced within the report. The table below shows the number of descriptor level categories selected for all the reports.

<b>ENVIRONMENT</b>	<b>NUMBER</b>	<b>PERCENTAGE</b>
<b>WEATHER</b>	2	40%
<b>CONDITIONS UNDERFOOT / ON WATER</b>	1	20%
<b>APPROPRIATENESS FOR GROUP</b>	1	20%
<b>OTHER</b>	1	20%
<b>TOTAL</b>	<b>5</b>	<b>100%</b>

Table 18. Environment

### Please give further details (Question 20)

This question was available to participants if they felt that adding further details around this specific contributory factor would be helpful in providing a fuller picture.

There were 5 entries for this question, and all would fit within the above categories.

### Equipment (Question 21)

This was described as based on the equipment used within the circumstances described in the report. The table below shows the number of descriptor level categories selected for all the reports.

<b>EQUIPMENT</b>	<b>NUMBER</b>	<b>PERCENTAGE</b>
<b>APPROPRIATENESS FOR GROUP</b>	1	20.00%
<b>USED CORRECTLY</b>	2	40.00%
<b>OTHER</b>	2	40.00%
<b>TOTAL</b>	<b>5</b>	<b>100.00%</b>

Table 19. Equipment

### Please give further details (Question 22)

This question was available to participants if they felt that adding further details around this specific contributory factor would be helpful in providing a fuller picture.

There were 4 entries for this question, and all would fit within the above categories.

### Organisational (Question 23)

This was described as based on factors that were influenced at an organisational level. The table below shows the number of descriptor level categories selected for all the reports.

ORGANISATIONAL	NUMBER	PERCENTAGE
STAFF RATIOS	0	0%
TRAINING OF STAFF	2	15%
SUPERVISION/MONITORING OF STAFF	5	38%
PROGRAMME DESIGN	0	0%
ORGANISATIONAL CULTURE	0	0%
ORGANISATIONAL COMMUNICATION	0	0%
RISK MANAGEMENT, POLICIES AND PROCEDURES	5	38%
OTHER	1	8%
<b>TOTAL</b>	<b>13</b>	<b>100%</b>

Table 20. Organisational

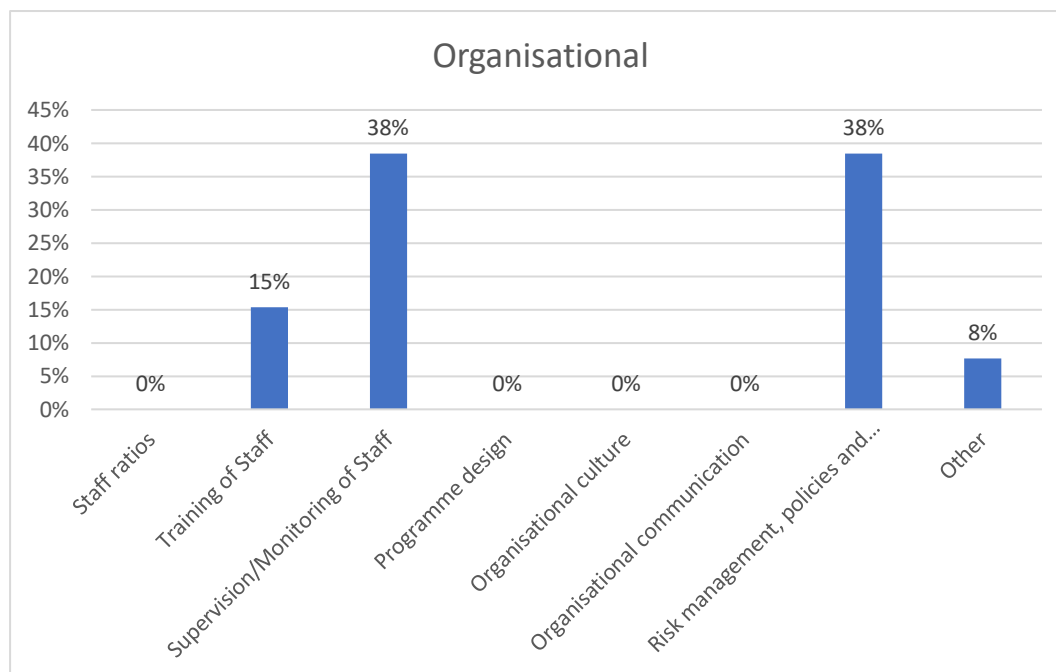


Figure 19. Organisational

### Please give further details (Question 24)

This question was available to participants if they felt that adding further details around this specific contributory factor would be helpful in providing a fuller picture.

There were 9 entries for this question. All the entries would have either fitted within the above categories, or were more in line with describing the lessons learnt from the incident.



## Overview of Contributory Factors

Below are a number of different ways of visualising the contributory factors identified.

Figure 20 and 21 are in relation to all the descriptor level factors.

Figure 22 and 23 are in relation to the totals from the 5 system level factors.

Out of interest, you can see that 'Awareness' – whether from the responsible person or others – is by far the most common reported factor.

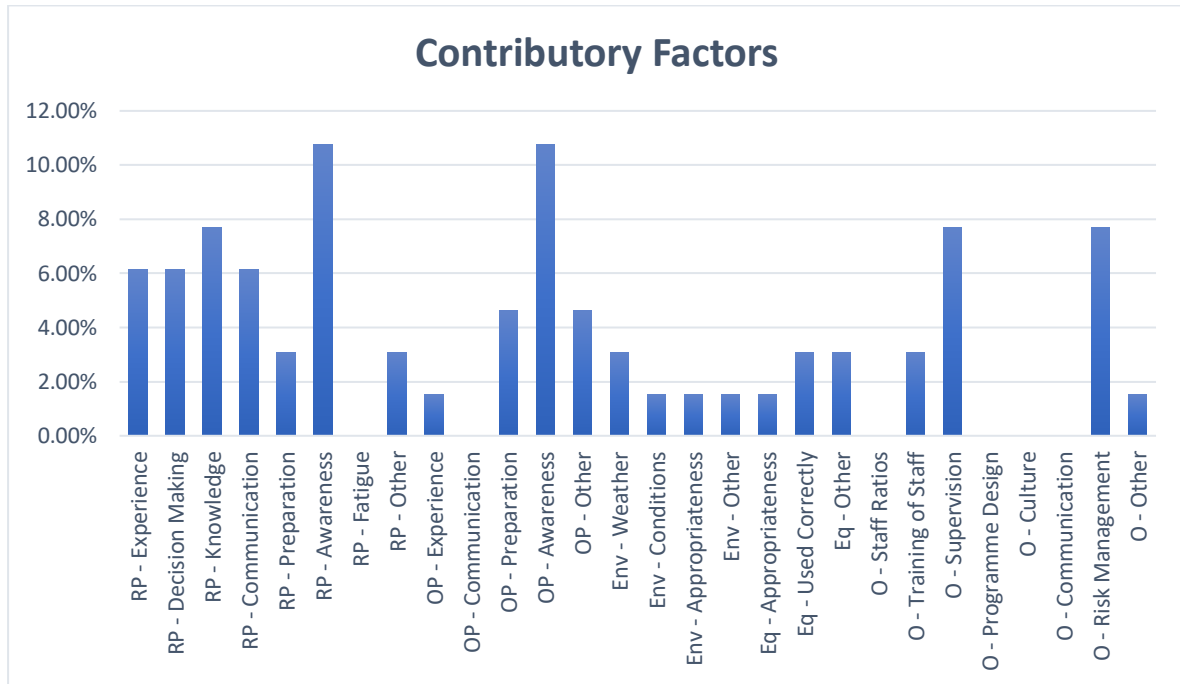


Figure 20. Contributory Factors - Graph

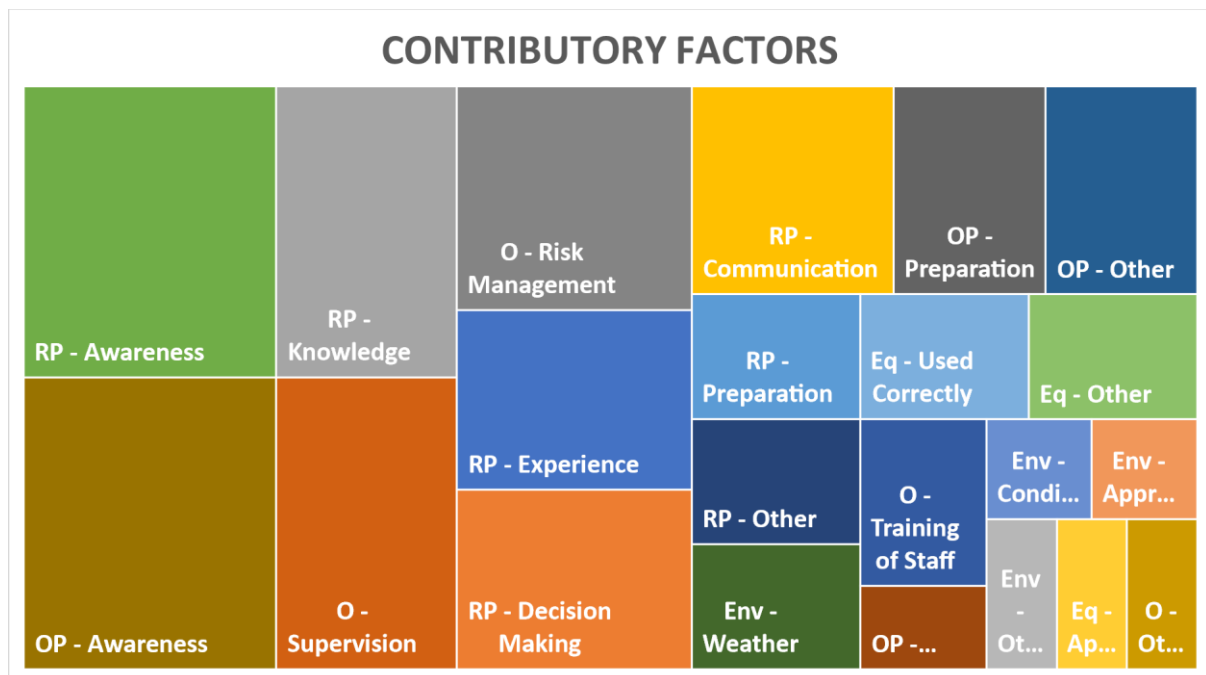


Figure 21. Contributory Factors – Treemap

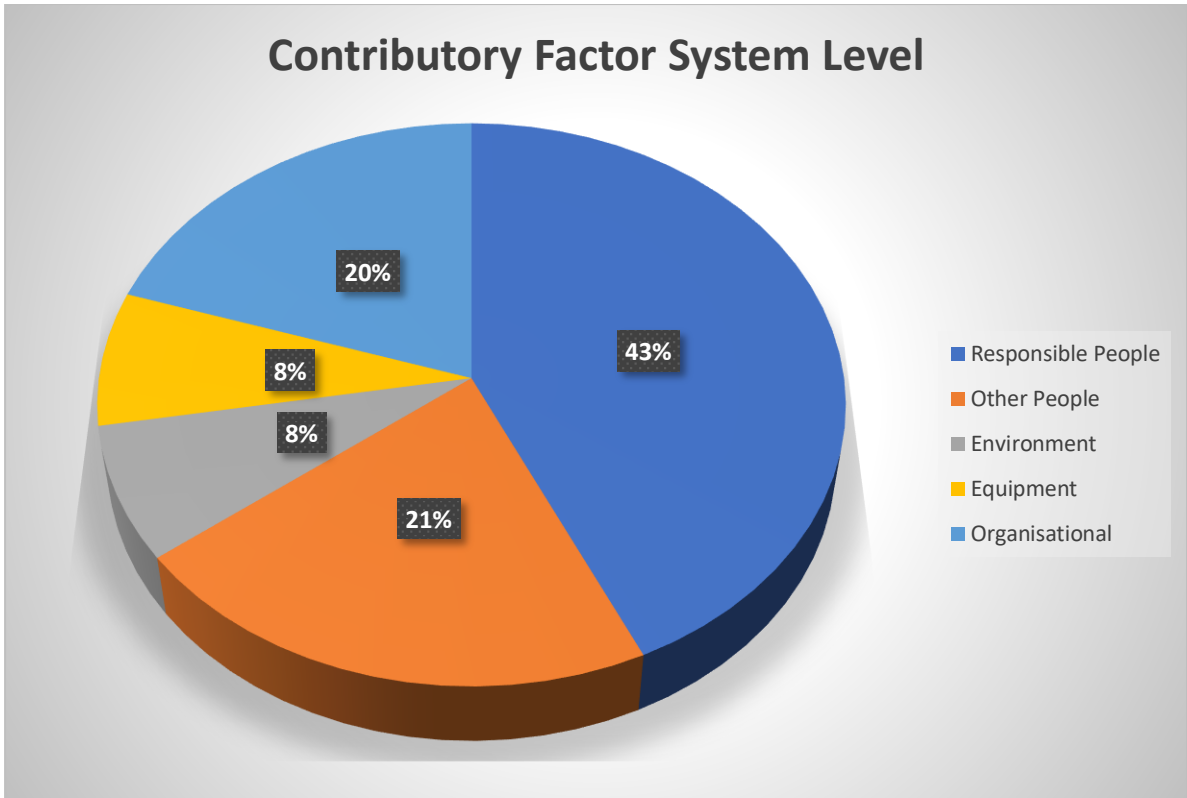


Figure 22. Contributory Factor System Level – Pie Chart

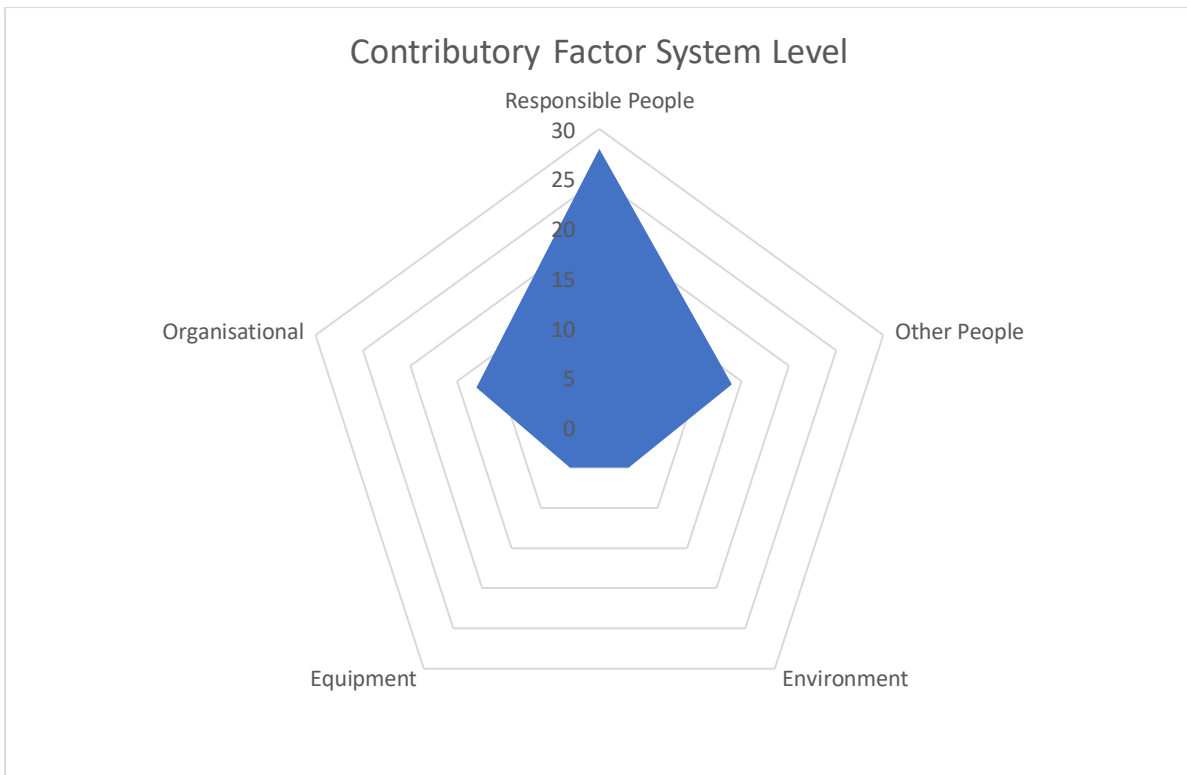


Figure 23. Contributory Factor System Level – Radar

Are there any other Contributory Factors not previously covered related to your report? (Question 25)

There were no significant additions to this question.

How have you changed your practice as a result of this incident / near miss? (Question 26)

There were 24 entries to this question. Responses ranged from 'No' to 'N/A' to 'Yes'.

15 responses included additional detail of how they changed practice. These included things such as;

- incorporating or changing equipment
- additional training
- additional staffing for specific situations
- changing risk assessments
- incorporating new aspects of activity briefings

## Participant Feedback / Evaluation

This was the final online survey, and was completed after participants had completed all their incident report forms and participant activity days. Whilst there were 7 organisations that completed the first part of the research, only 6 organisations completed the final feedback.

The first part of this gives an overview of the different organisations.

The second part details thoughts and comments they had on the forms and process.

### About them

Of the 6 providers all but 1 of them held an AALA Licence. There was a mixture of other accreditations they held, summarised below.

- *Royal Yachting Association including RYA Training Centre*
- *Learning Outside the Classroom Quality Badge*
- *Association of Heads of Outdoor Education Centres Gold Badge*
- *British Activity Providers Association*
- *Adventure Activity Associates*
- *Royal Life Saving Society*
- *Ofsted*
- *Various NGB's, mainly because they are a provider for them*
- *Activity inspections from various external companies*

Generally participants didn't report incidents to anyone else (other than RIDDOR where required).

The exception was Local Authority participants reported incidents through their systems as well, and some participants shared incidents with their Technical Advisors to get an external perspective.

Table 1 (page 11) provides further description of the breadth of provision and organisational structure within the participants.

## About the Forms

The following are questions that were asked in relation to the forms filled out, with an overview of their responses.

### What parts aligned with your own reporting forms? What parts of the form do you not collect in your internal reporting forms?

Around half the participants stated that all the parts aligned with their own reporting forms. For those that wasn't the case, it was primarily the Contributory Factors that didn't align. Though some participants stated that they did record Contributory Factors for more significant incidents. Some of their reporting forms focused more on actions, investigation and outcomes.

### Were there any areas that you felt were missing in the reporting form?

There were a few suggestions, such as;

- Who did it happen to (ie. staff, client, public)
- Any treatment given
- Weather conditions, though it was acknowledged that they could be included in Question 25 if known

### What information do you think is the most useful and important for improving knowledge?

Below is a summary of the various thoughts;

- How the incident happened, where and the time
- The event and factors leading to it
- Statistics of large numbers of providers, which would give an indication of trends
- What actions were taken if any
- Issues around liability, particularly in relation to external groups using participants facilities

It was commented by one participant that they liked the questions around Contributory Factors.

### How user-friendly was the form? In what ways could it be improved?

There was a range of responses, that included 'friendly' and 'easy' to 'the form is very long' and difficulty with inputting the date for each form.

There was a comment about how the person inputting the data wasn't necessarily involved in the incident, so did not have all the background knowledge in regards to the Contributory Factors.

Making this difficult to complete, but also raising the issue of a level of unconscious bias for anyone completing this section.

#### Where there any issues with including the Participant Activity Days?

This was split about half finding it straightforward, and the other half having issues around ease of gathering that data – particularly on a weekly basis – and that they run a range of different sessions, some which may be drop in activities making it difficult to accurately quantify the number in Participant Activity Days.

#### What (if anything) would you find beneficial for your organisation and staff, in regards to sector-wide safety and risk management information?

There was a common consensus to this question, all along the lines of;

- sharing info about accidents and near misses
- pooling of knowledge, to help prevent incidents and influence training
- sharing of trends
- lessons learnt from incidents and sharing of current trends

#### Would you consider taking part in a longer trial, inputting data as you go?

Two organisations said yes, three organisations were unsure and one organisation said no.

For the unsure organisations, factors to consider were that it depended on the results, the concern around capacity/resources to input this data throughout their whole organisation and finally wanting to see how this current phase went.

#### Do you have any other suggestions?

One response was encouraging about having being part of a similar scheme overseas, finding it very good and helpful, particularly in regards to helping “foster an openness to risk management instead of a culture of trying to hide it from our fellows in the industry”.

Other suggestions included whether they could anonymise their current data and share that directly with us to help support a follow-on trial. Finally concerns about workload were raised again, as well as clarification around the legal ramifications for organisations sharing potentially sensitive data, whether that could be accessed or requested by others.

# Discussion and Recommendations

This section is guided by the four objectives for the research;

- Explore and identify the key information required in an incident-reporting system, that uncovers content needed for collective knowledge to be formed.
- Evaluate its usability for participant organisations and providers.
- Identify any potential ways that individuals or organisations could be identified within the data collected.
- Analyse the data at the end, identifying any gaps that can be altered in the final incident-reporting system.

Finally a conclusion brings it together with a final recommendation.

## Key information required in an incident-reporting system

The information that was gathered could be grouped as either being 'categorised' or 'descriptive'.

In simple terms, the categorised information enabled simple statistical analysis, including the comparison between categories. For example, we were able to identify the percentage of incidents reported versus near-misses. This analysis was possible to handle large amounts of data in a relatively short time-frame, to produce some key headlines.

The descriptive information varied considerably between the amount of detail that participants entered – some participants gave very little detail around the context of the form, so that made it difficult to draw significant conclusions. It also required a significant more amount of time to go through the descriptions, and often required manually checking all the other responses within that particular form to give a clearer picture of the incident or near-miss.

Feedback from participants was that generally the form contained most elements of what they would include themselves in their incident report forms. There were some areas identified (such as who it happened to or the weather conditions) that could also be included in the form.

The severity rating was set at three different levels. There was 90% reported as a low significance, with the remaining 10% as medium significance. Whilst this is positive in the sense that there was incidents mostly of a low significance, this doesn't allow much detail in the lower significance categories. A more nuanced understanding may be possible if the severity rating was broken down into a 1 to 5 category framework, allowing scope for greater variation in the lower significance incidents.

The Contributory Factors section allowed a clear way to identify issues or trends across the data. For example it became clear that the majority of issues involved related to 'awareness', of both the responsible person and others in the situation. This could allow us to focus on developing material that helps raise the profile of situational awareness and create additional training opportunities. Even simply by drawing attention to these themes, should create greater awareness of it as an issue. Whilst there are strong benefits to including the contributory factors, 70% of the reports submitted didn't include any. Therefore it weakens the position that their analyses indicates trends across the sector. Some reasons for the low rate could be;

- Organisations don't collect that data or review their incidents in that way
- The forms were all submitted in retrospect (and often by individuals not directly involved), so there was a lack of knowledge about the incident
- The type of events submitted were quite broad, and therefore some may not have any relevant contributory factors

There is also an element of bias possible in the recording of this. Whilst it can appear clearly defined and objective, they are based upon individuals subjective view and perception of the incident. Therefore they may be more attuned to certain issues, whilst being blind to others that may have still been present. Ways to help reduce this would be include additional training and guidance material for each category, so that helps standardise what participants understand each factor to mean.

The final question (Question 26) which was asking how they changed their practice as a result of the incident was more vague than expected. There were only 15 responses that included detail other than Yes/No. Potentially the wording of the question should change, to along the lines of 'What knowledge would you like to share with others following this incident / near miss?'. This might draw different responses other than just how they reacted to the recorded incident.

The recording of participant activity days allowed an analysis of the data against the busier and quieter times of year. It also provided data around general participation within the outdoor sector. Some organisations found it difficult to gather that data by weeks, and other organisations ran certain activities that made the accurate recording of that participation more difficult (eg. drop-in sessions). It was possible through the analysis of the number of incidents against the total participant activity days, to identify various rates (see Table 21 below). This reinforces the trend identified earlier regarding the lower rates of Near Misses reported compared to Incidents.



<b>PARTICIPANT ACTIVITY DAYS (PAD) (24,635 Days)</b>	<b>PERCENTAGE %</b>	<b>1 IN ... PAD</b>	<b>NO. PER 1000 PAD</b>
INCIDENTS (Total)	0.30%	1 in 333	3
INCIDENTS (Minus Free Time)	0.22%	1 in 454	2.2
NEAR MISS	0.05%	1 in 2000	0.5
MEDIUM SIGNIFICANCE (Incidents & Near Miss)	0.04%	1 in 2237	0.4

Table 21. Report Rates

**Recommendation 1:** A decision on the purpose and use of the categorised versus descriptive information. A suggested option would be all information to be categorised, with an optional part that would include descriptive information if the organisation thought it was a useful case-study to share.

**Recommendation 2:** Continue to include Contributory Factors with some further adjustments to the specific factors. Develop relevant guidance and training material to help support organisations in their understanding of them. Consideration should be given to who completes the form (discussed further down in Recommendation 5).

**Recommendation 3:** Review the Severity Rating scale to consider it being expanded, giving greater nuance in the lower end of the scale.

**Recommendation 4:** Reword the ‘How have you changed your practice’ question to encourage more responses that may be helpful in sharing widely within the sector.

## Useability

Participants had a range of opinions about this, with some finding it very easy and others finding it less so. The main comment seemed to be around the length of the form. Changing the format to just categorised information with an option for descriptive information may help with this issue. If a new trial was conducted gathering data as we went, then the workload for this would not be as concentrated in a single point.

It does raise the issue of who should complete the form. For this trial it varied down to the scale of the organisation – the smaller organisations the individuals inputting the data had knowledge of the incidents, whereas the larger organisations were further removed from the specifics. Consideration

should be given to whether the specific instructor/responsible person should fill out the form, or a senior person at each site that has knowledge of the incident (eg. Chief Instructor). A downside of the individual instructor filling it out is that there could be huge variety in the consistency and accuracy of the Contributory Factors (even with additional training), and this may vary from their own organisation's views of the incident.

To counter this, a new platform could be developed that allowed the individuals to submit the forms online, which go to a senior person in their organisation for review/approval before it is finally submitted. A further radical suggestion, is that the new platform could then send their submitted report to themselves, allowing them to use it as their own incident reporting system. This would then give scope and purpose to including more descriptive information, which they would potentially be recording themselves anyway.

**Recommendation 5:** Consider who should ideally fill out the form as this will affect how we adjust the length, content and platform used.

**Recommendation 6:** Investigate the potential for developing our own platform that can be used for reporting of incidents and near misses.

## Anonymity

In this current phase all participants were asked to include their 'organisational identifier', which was an assigned number. This was to ensure the ability to remove any of their data from the results if they requested that at a later stage. Otherwise it was not included in any of the data analysis.

The specific questions of 'Location' and 'Activity' were both free-text options. This meant that there was a wide range of inputs, some of which were more specific and therefore possible to identify or narrow down the particular organisation. Changing these to categorised options with pre-defined options they can select would remove this issue.

Within the descriptive information (eg. narrative of events) there was scope for potential identification of the organisation, though all participants in this study kept their descriptions broad enough ensuring that this wasn't possible.

Concerns were raised by participants about the legal ramifications of sharing this type of data, and whether it could be 'requested' by others and then used against them in legal proceedings. This is an area that requires further investigation, but does support the case for having the individual entries

completely anonymous (ie. no organisational identifier) and keeping data confined to categorised unless they wish to share a specific case-study.

**Recommendation 7:** Categorise the 'Location' and 'Activity' questions with a wide range of options.

**Recommendation 8:** Investigate the legal ramifications of organisations submitted data and the potential of whether data can be requested at a later date.

## Gaps identified

No gaps requiring urgent attention were identified. Whilst there is always additional data that could be collected, this needs to be balanced with the complexity and length of the form. If anything new was added then suggestions around 'who it affected' and the 'weather conditions' should be included.

There are a number of other related issues found, which need further consideration.

The scope and boundaries of the project need additional consideration. For example there was three different forms that organisations could submit. The 'Safety Observation' form was only submitted by one organisation, and therefore is difficult to make comparisons of that data across the sector. Whilst potentially containing helpful information, including aspects that may help reduce incidents or near-misses, it may be better to remove that category as an option.

The type of organisations recruited for this phase were broad in scope, ranging from UK-wide multi-site operations to sole operators. Where clarification is required is around the type of activities they offer, and the style of provision they provide. For example do we go down the route of UPLOADS and clarify it as 'Led Outdoor Activities', thereby implying that it is just for organisations that run sessions with groups or individuals. Or do we broaden it out to include organisations and activities that offer a 'come and try' session, often associated with ropes courses and climbing walls.

In addition, the majority of activities and subsequent location of the report forms was 'Free Time' (34%) and 'Centre' (43%). It is clear that when including residential organisations, that their majority of incidents and injuries will be incurred in this way. The question is whether this is the focus of the project – or should it purely be upon the provision of outdoor adventurous activities? If free time and residential related incidents were removed, then this would significantly affect the statistics, but

would also potentially make the analysis and sharing of knowledge around activity incidents more precise and refined.

**Recommendation 9:** Define the scope and boundaries of the project to allow consistent and reliable data collection. Specifically in relation to the type of reports, type of organisations and whether to include 'free time' incidents.

## Conclusions

From this research it is reasonable to say that it is possible to develop a sector-wide incident reporting system that allows identification of trends. There is further work needed before this can come to fruition, with particular areas being refining the scope of the project, who is intended to complete the forms and any legal ramifications.

There was a mixed response from the participant organisations as to whether they would participate in a follow-on project. Some were yes whilst others were wanting to consider the outcome of this phase of the project, and resolve issues around capacity to input all their data – which is where Recommendation 5 should help.

It was clear that organisations were affiliated with a wide range of other organisations (eg. RYA, OEAP, NGBs etc). It is essential that these key stakeholders are communicated with and brought into the project if interested. For this to be successful there needs to be wide-ranging support across the sector.

What was common across the participants was that they all agreed that it would be helpful to them and their staff if across the sector we were able to pool knowledge and share information and trends regarding incidents and near misses. This would help us prevent future incidents and influence training needs for the developing workforce.

**Recommendation 10:** Key sector stakeholders should be communicated with and brought into the project where possible. Consideration should be given to how to continue to manage the project alongside these stakeholders.

**Recommendation 11:** The 'Collective Knowledge Project' should continue to be developed, with the aim of preventing future incidents, supporting the diverse sector, and encouraging the development of frontline practitioners.

# References

- Barton, B. (2008). *Safety, risk & adventure in outdoor activities*. SAGE Publishing.
- Berry, M., & Hodgson, C. (2011). *Adventure Education: an introduction*. Abingdon: Routledge.
- BMC. (2023). BMC Incident and Near-miss Reporting. Retrieved 26 July 2023, from <https://www.thebmc.co.uk/modules/incident-reporting/>
- British Canoeing. (2023a). Incident Reporting. Retrieved 26 July 2023, from <https://www.britishcanoeing.org.uk/guidance-resources/safety-1/incident-reporting>
- British Canoeing. (2023b). Safety Alerts. Retrieved 26 July 2023, from <https://www.britishcanoeing.org.uk/guidance-resources/safety-1/safety-alerts>
- British Cave Rescue Council. (2023). Incident Reports. Retrieved 26 July 2023, from <https://www.caverescue.org.uk/about-cave-rescue/incident-reports/>
- Brookes, A. (2018). *Preventing Fatal Incidents in School and Youth Group Camps and Excursions: Understanding the Unthinkable*. Cham: Springer.
- Clark, T., Foster, L., Sloan, L., & Bryman, A. (2021). *Bryman's Social Research Methods 6<sup>th</sup> Edition*. Oxford: Oxford University Press.
- Foster, L., Diamond, I., & Jeffries, J. (2015). *Beginning Statistics: An introduction for social scientists 2<sup>nd</sup> Edition*. London: SAGE.
- Fulbrook, J. (2016). *Outdoor Activities, Negligence and the Law*. Abingdon: Routledge.
- Goode, N., Salmon, P.M., Taylor, N.Z., Lenne, M.G., & Finch, C.F. (2017). Developing a contributory factor classification scheme for Rasmussen's AcciMap: Reliability and validity evaluation. *Applied Ergonomics*, 64, 14-26.
- Hecker, A. (2012). Knowledge Beyond the Individual? Making Sense of a Notion of Collective Knowledge in Organization Theory. *Organizational Studies*, 33(3), 423-445.

Humberstone, B., Prince, H., & Henderson, K. A. (2016). *Routledge International Handbook of Outdoor Studies*. Abingdon: Routledge

IRATA. (2023). Work & Safety Analysis Reports. Retrieved 01 March 2024, from <https://irata.org/page/work-safety-analysis-reports/>

MAIB. (2022). Report on the investigation into the stand up paddleboarding accident that resulted in four fatalities at Haverfordwest Town Weir, Wales on 30 October 2021. Retrieved 30 July 2023, from <https://www.gov.uk/maib-reports/commerical-stand-up-paddleboarding-accident-on-river-weir-with-loss-of-4-lives>

Martin, B., Breunig, M., Wagstaff, M., & Goldenberg, M. (2017). *Outdoor Leadership: Theory and Practice 2<sup>nd</sup> Edition*. Champaign: Human Kinetics.

Maslen, S., & Hayes, J. (2016). Preventing black swans: incident reporting systems as collective knowledge management. *Journal of Risk Research*, 19(10), 1246-1260.

McLean, S., Coventon, L., Finch, C. F., & Salmon, P. M. (2022). Incident reporting in the outdoors: a systems-based analysis of injury, illness, and psychosocial incidents in led outdoor activities in Australia. *Ergonomics*, 65(10), 1421-1433.

Priest, S., & Gass, M. A. (2005). *Effective Leadership in Adventure Programming 2<sup>nd</sup> Edition*. Champaign: Human Kinetics.

Rasmussen, J. (1997). Risk management in a dynamic society: A modelling problem. *Safety Science*, 27(2/3), 183-213.

RYA. (2023). Accident and Incident Reporting. Retrieved 26 July 2023, from <https://www.rya.org.uk/about-us/policies/safety-management/reporting>

Salmon, P. M., Goode, N., Taylor, N., Lenne, M. G., Dallat, C. E., & Finch, C. F. (2017). Rasmussen's legacy in the great outdoors: A new incident reporting and learning system for led outdoor activities. *Applied Ergonomics*, 59, 637-648.

Salmon, P., Williamson, A., Lenne, M., Mitsopoulos-Rubens, E., & Rudin-Brown, C. M. (2010). Systems-based accident analysis in the led outdoor activity domain: application and evaluation of a risk management framework. *Ergonomics*, 53(8), 927-939.

UPLOADS. (2023). The UPLOADS Project. Retrieved 26 July 2023, from <https://uploadsproject.org/>

# Appendix 1.

## Incident Reporting Form

### Summary of Reports

#### 2. Type of report \*

*Incident - classed as any event (planned or unplanned) that has occurred which has caused harm (physical, emotional, psychological etc.) to individuals.*

*Near Miss - classed as an event or sequence of events that could have led to harm towards individuals.*

*Safety Observation - classed as anything else that doesn't fit in the Incident/Near Miss categories, and would be useful information to record and/or share.*

- Incident
- Near Miss
- Safety Observation

#### 3. Date of report \*

*Please insert the date of the incident/near miss/safety observation.*

#### 4. Location \*

*Please insert a general description of the location of the report, without specifically identifying it.  
eg. Open water loch, single-pitch crag, on-site zip wire*

#### 5. Activity \*

*Please insert a general description of the activity being undertaken in relation to the report.  
eg. canoeing, rock climbing, ropes course*



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## 6. Summary of Incident \*

*Please describe in very brief terms the nature of the report.*

## 7. Were there any physical injuries or medical concerns? \*

*If First Aid was administered, then please select Yes.*

- Yes  
 No

## 8. Area of physical injury

*If there were no physical injuries don't select anything*

- Arm  
 Back  
 Chest/Torso  
 Face/Eye  
 Foot/Ankle  
 Hand/Fingers  
 Head  
 Leg  
 Neck/Shoulder

## 9. Nature of Injury

- Abrasion

- 
- Amputation
  - Asphyxiation
  - Bite / Sting
  - Bruise / Bump
  - Burn / Scald
  - Crush
  - Cut / Laceration
  - Dislocation
  - Electrical Shock
  - First Aid Administered
  - Fracture
  - Internal Injury
  - Loss of consciousness
  - Loss of sight
  - Other injury
  - Psychological Distress
  - Puncture
  - Strain / Sprain

#### 10. Medical concerns

- Cold Injuries
- Heat Injuries
- Asthma
- Any other pre-existing medical conditions

#### 11. Did they require additional medical treatment?

*For example A&E or Minor Injuries*

- Yes
- No

## 12. Age bracket of affected individual(s)

Primary School aged

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Secondary School aged

Adult aged

Other

## 13. Brief narrative of the facts and events that took place

*Please ensure you don't use specific names for individuals, groups or locations. Use generic titles such as instructor, group member or climbing tower.*

## 14. Severity Rating of Report \*

*Consider the potential level of harm towards individuals within the report and rate accordingly.*

*Low Significance - whilst causing or had the potential to cause some form of harm to the individuals affected, there was little to not medical attention required, with no concern for long-term injury or damage.*

*Medium Significance - did or could have had the potential to cause reasonable harm to the individuals affected. It is likely that medical attention would have been required, with some form of recovery needed.*

*High Significance - did or could have had the potential to cause life-threatening or life-altering injuries to the affected individuals.*

Low Significance

Medium Significance

High Significance

## Contributory Factors

*These are circumstances and conditions that are present in relation to the report.*

*In isolation they may not have directly caused the incident/near-miss, but collectively with other associated factors they will have increased the likelihood of it occurring.*

*You only need to select the boxes that you believe were present in your report.*

*You only need to add further details if you believe it will be helpful to provide a fuller picture.*

### 15. Responsible People

*This will be the people who had direct responsibility over the group or circumstances within the report. For example the instructor, coach, guide etc.*

- Experience
- Decision Making
- Knowledge
- Communication
- Preparation
- Awareness
- Fatigue
- Other

### 16. Please give further details

## 17. Other People

*This will be any other people who are connected with the group or circumstances within the report. For example group members, leaders, members of the public etc.*

- Experience
- Communication

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- Preparation
- Awareness
- Other

## 18. Please give further details

## 19. Environment

*This will be based on the conditions experienced in the report.*

- Weather
- Conditions underfoot / on water
- Appropriateness for group
- Other

## 20. Please give further details

## 21. Equipment

*This will be based on the equipment used within the circumstances described in the report.*

- Appropriateness for group
- Used correctly
- Other

## 22. Please give further details

## 23. Organisational

*These are based on factors that are influenced at an organisational level.*

- Staff ratios
- Training of Staff
- Supervision/Monitoring of Staff
- Programme design
- Organisational culture
- Organisational communication
- Risk management, policies and procedures
- Other

## 24. Please give further details

**Additional Comments**

**25. Are there any other Contributory Factors not previously covered related to your report?**

**26. How have you changed your practice as a result of this incident/near-miss?**

# Appendix 2.

Guidance Notes – Incident Report Form

## Guidance Notes – Incident Report Form

This is to give additional guidance to the online form titled *Collection Phase 1a*.

### Page 1 & 2 – Welcome & Privacy Notice

This gives a brief overview of the research and the current phase. In addition, the Privacy Notice details the information that is to be collected and how it is to be used and stored.

### Page 3 – Organisation Identifier

Please select the number that has been assigned to your organisation. This is to ensure that if you choose to withdraw at a later date then we can remove your data from the research.

### Page 4 – Summary of Reports

Q2. Type of Report

Please select the one that you think best fits the descriptions below;

- **Incident:** classed as any event (planned or unplanned) that has occurred which has caused harm (physical, emotional, psychological etc.) to individuals. *For example, whilst loading a kayak trailer an untied kayak fell off and hit a group member who was tying down another kayak below it.*
- **Near Miss:** classed as an event or sequence of events that could have led to harm towards individuals. *For example, whilst loading a kayak trailer an untied kayak fell off, going over and missing a group member who was tying down another kayak below it.*
- **Safety Observation:** classed as anything else that doesn't fit in the Incident/Near Miss categories, and would be useful information to record and/or share. *For example, whilst loading a kayak trailer, staff noticed that one of the ropes that tied a kayak down was becoming frayed from abrasion with the trailer. Was a reminder to regularly check the ropes for wear.*

You may not record all the descriptions above, and you are only expected to input forms that you have collected.

Q3. Date of Report

Please put the date that the event or sequence of events occurred, to the best of your knowledge.



Q4. Location

Please insert a general description of the location of the report/event, without specifically identifying it.

*For example – open-water loch/lake, single-pitch crag, on-site zip wire, Grade 2 river etc.*

Q5. Activity

Please insert a general description of the activity being undertaken in relation to the report.

*For example – canoeing, rock climbing, ropes course, kayaking etc.*

Q6. Summary of Incident

Please describe in very brief terms the nature of the report.

*For example...*

- *Whilst loading a trailer a kayak fell off and injured a group member*
- *A groups tandem canoe became separated from the activity group during strong winds*
- *During a climbing session a group members unattached helmet fell from the top of the crag missing other group members below*

Q7. Where there any physical injuries or medical concerns

Please select Yes or No. If Yes, please complete to the best of your knowledge Questions 8 to 11.

Q12. Age bracket of affected individual(s)

Please complete this to the best of your knowledge. If the person affected is staff or a volunteer, then select Adult aged unless they are under the age of 18 and still in Full-Time Education (ie. college course). If the Near Miss or Safety Observation did not impact anybody, then you do not need to fill it out.

Q13. Brief narrative of the facts and events that took place

Please ensure you don't use specific names for individuals, groups or locations. Use generic titles such as instructor, group member or climbing tower.

*For example...*

*The days activity was a paddlesports safety and rescue course. The conditions were very cold and dry. All the students had got wet during the course and were rushing to load the trailer with boats, which was a few 100m from the water. Everyone was spread around because we couldn't carry all the boats up at the same time. Some kayaks had been loaded onto both the bottom and middle bars of the*

*trailer, resting on their sides. Students began tying the bottom kayaks off, which with the slight movement of the trailer caused the kayaks above to topple over and fall off the trailer, arcing above the heads of the students tying the bottom kayaks down. No one was injured.*

You may have less or more detail than the above. Consider including key information around the nature of the day, the group, the activity and the sequence of events that led to the incident or near miss. Remain factual in your description.

#### Q14. Severity Rating of Report

Consider the potential level of harm towards the individual within the report and rate accordingly.

- **Low Significance:** whilst causing or had the potential to cause some form of harm to the individuals affected, there was little to no medical attention required, with no concern for long-term injury or damage.
- **Medium Significance:** did or could have had the potential to cause reasonable harm to the individuals affected. It is likely that medical attention would have been required, with some form of recovery needed.
- **High Significance:** did or could have had the potential to cause life-threatening or life-altering injuries to the affected individuals.

### Page 5 – Contributory Factors

These are the circumstances and conditions that are present in relation to the report. In isolation they may not have directly caused the incident/near miss, but collectively with other associated factors they will have increased the likelihood of it occurring.

If you did not collect this data, or are unable to draw any of these conclusions then please don't fill any out.

If you are able to, then please only select the boxes that you believe were present in your report. You only need to add further details if you believe it will be helpful to provide a fuller picture.

### Page 6 – Additional Comments

Q25. Are there any other Contributory Factors not previously covered related to your report?

If you feel that there are additional categories that are not included on Page 5 that are relevant to your report, please include them here.

Q26. How have you changed your practice as a result of this incident/near miss?

Please include any conclusions that you have drawn about the event recorded, and what changes you made (if any).