



# Missing Person Behaviour

A U.K. Study  
(Interim Report)  
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## Abstract

The report seeks to provide information to help in search management. Up to now, information about missing person behaviour has been centred on North American incidents. This report provides the first indications based on purely UK and Northern Ireland incidents.

The data has been collected using a standard form submitted by teams reporting incidents involving missing persons. It is based on a form designed and tested over a period of 2 years.

The report gives an analysis of two main categories (despondent & vulnerable) where a large enough sample size currently exists. Some analysis for other categories (hiker and miscellaneous) has been attempted where the sample size not quite as large.

The report seeks to inform those persons who have contributed to the study and to encourage others to join in this important work.

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# **MISSING PERSON BEHAVIOUR STATISTICS FOR THE UNITED KINGDOM NOVEMBER 2001**

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## **INTRODUCTION**

The authors presented a paper at the 2001 MRC conference in Durham to outline progress to date with the Missing Person Behaviour data collection system that is now part of the MRC Incident Reporting procedure. At the time of writing the UK Missing Person database has 195 records in total. The authors would have preferred to wait until more data was available before publishing any findings, but the majority feeling at Durham showed that there was sufficient interest in what had been collected so far and that people would understand the constraints imposed by the limited volume of data. It was also noted that a sighting of our very own UK Missing Person Behaviour Statistics might act as a spur to those individuals who have so far been reluctant to contribute.

## **BACKGROUND**

Since the MRC conference at Lancaster in October 2000, teams have been offered the opportunity to fill in an extra sheet each time they send in an MRC Incident Report, either electronically or on paper. This extra sheet is the MRC Missing Person Behaviour Report. It is used to collect information relating to incidents taking place within the UK to add to the Missing Person database.

The ideas behind Missing Person Behaviour Statistics and their use as a management tool have been around since the late 1970s. Until now, however, a criticism regularly aired in the UK has been that all of the available information is based on incidents that took place on the North American continent. This is an attempt to overcome that criticism.

## **REPORTING THE RESULTS**

Missing Person Behaviour Statistics tell us what similar people have done in similar situations in the past. They enable us to construct meaningful scenarios in our attempt to find the person that we are currently looking for. The level of confidence that the user has in these scenarios should reflect the volume of data from which the statistics are derived (the sample sizes). Users should have more confidence therefore in scenarios based on the statistics in this report for a missing despondent (sample size 70) than they should for a missing person classed as 'miscellaneous' (sample size 13).

It is important that the end user understands the level of reliability of the information that they are given. To the authors, that statement can be interpreted as saying that it is wrong to publish the results in all of the categories in exactly the same way - the level of reporting should reflect the sample size. It was considered that categories with a large sample size could stand being reported in detail; categories with a modest sample size should be given a limited report; categories with a very small sample size should not be reported at all.

For example - an analysis of the data reveals that in every incident involving missing mountain bikers a fatality was recorded. However, add to that the fact that the database contains only one record for a missing mountain biker and the point is made - the style of reporting should reflect the sample size.

The table below shows how many people were reported as lost or missing in each of the twelve categories (the sample sizes), and the level of reporting that each category is given in this document. The makeup of the categories is described in Appendix 1 - Missing Person Behaviour Study Definitions.

**Table 1: number of individuals reported as lost or missing in each category to October 2001 (the sample sizes)**

<b>category</b>	<b>number of people (sample size)</b>	<b>level of reporting</b>
despondents	70	reported in full
vulnerables	57	reported in full
hiker / walker	22	partial report
miscellaneous	13	limited report
child 7 to 12	10	not reported
Organised party	10	not reported
Youth 13 to 16	10	not reported
child 1 to 6	1	not reported
fellrunner	1	not reported
Mountain biker	1	not reported
climber	0	not reported
skier	0	not reported
total	195	

## **STATISTICAL SIGNIFICANCE** (refer to Appendix 2 for more detail)

The objective from the start was not only to report on how the missing persons in each category behaved but also to attempt to attach some kind of statement of statistical significance to the results. This is possibly the first time that this has been done in reporting Missing Person Behaviour statistics. For example, approximately half (46%) of the incidents in the database that involve despondents reported a fatality. The fact that this statistic is based on 70 reported incidents makes it worth noting. But when we add the fact that all of the incidents relating to all of the other eleven categories of missing person (125 records in total) show only a 17% rate of fatality then the 46% for despondents really does seem to be telling us something important about despondents. This is an example of a 'significant' result.

As an aside, it is worth looking at the characteristics of the whole population of missing persons in the database. A result recorded as 'significant' is going to be very different from these:

1. analysis by subject's condition when found:

60% were unhurt when found  
27% were dead  
8% were injured  
5% were not found.

2. analysis by the location where the subject was found:

16% were found at or by habitation  
15% were found at or by a building or shelter  
13% were found on a road  
13% were found by water or water's edge  
12% were found on open ground  
10% were found in a forest or woodland  
no other location gave %s in double figures.

## THE RESULTS SO FAR

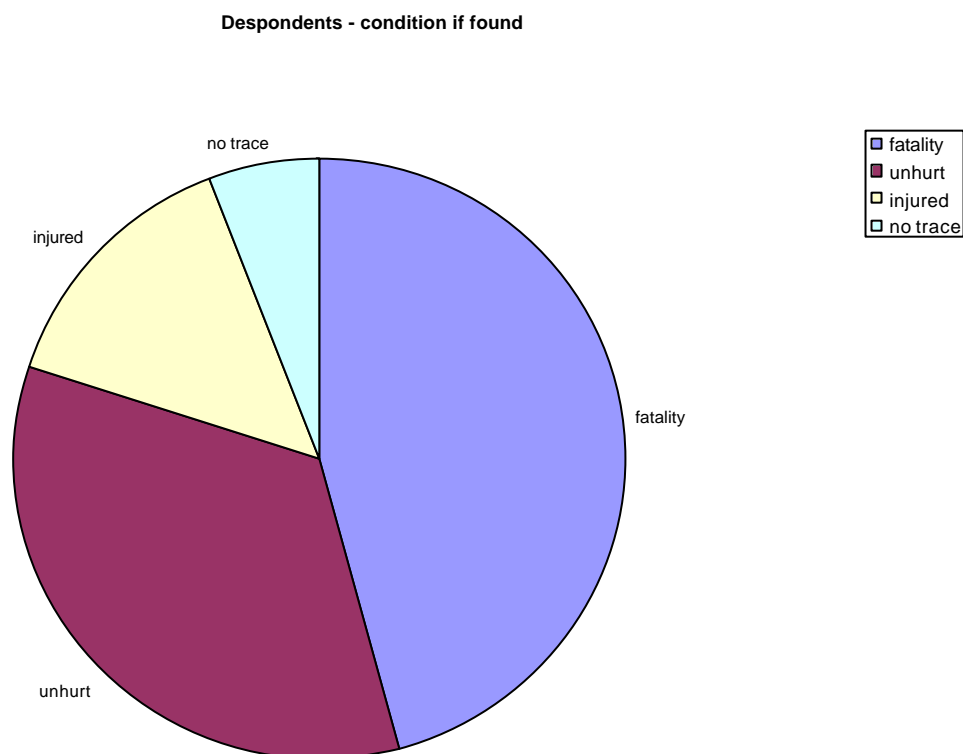
Categories reported in full - the categories reported in full are despondents and vulnerables.

### A. Despondents - sample size 70

Table 2:

Despondents - analysis by subject's condition when found

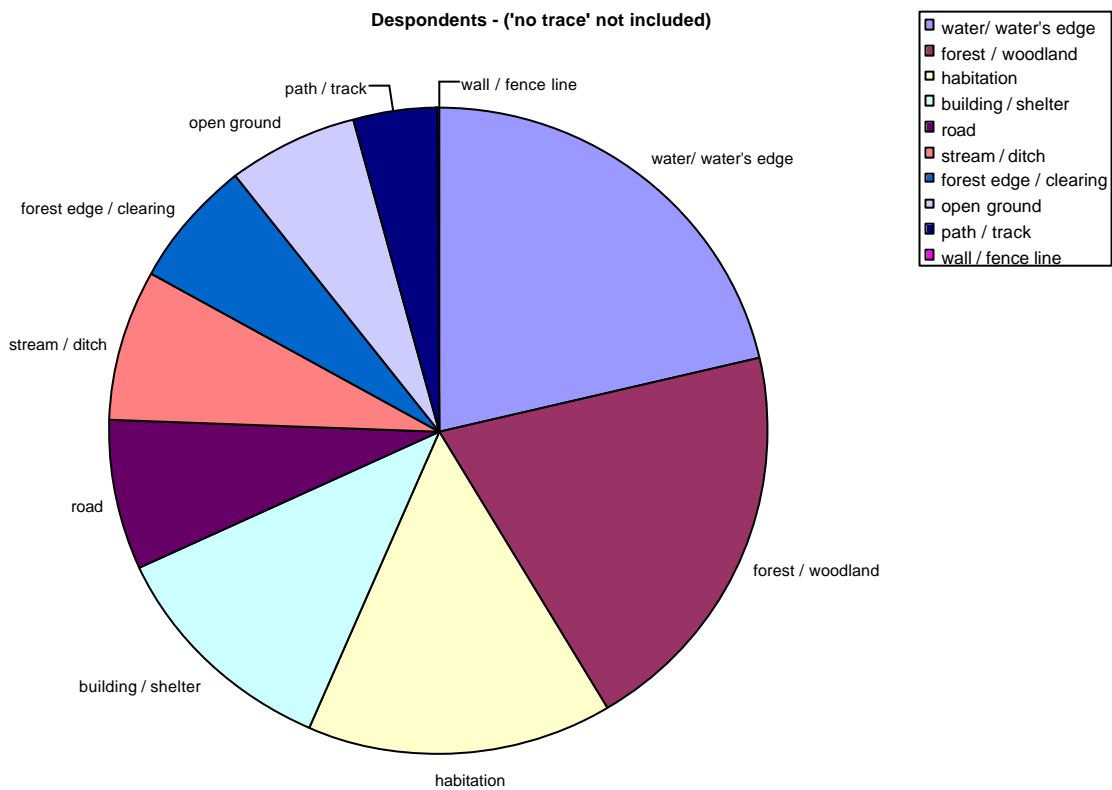
Condition when found	number	percentage
Fatality	32	46
Unhurt	24	34
Injured	10	14
no trace	4	6
Total	70	100



These proportions are extremely unlikely to have occurred by chance. In other words you should be aware of the relatively high number of fatalities and the relatively low number classed as unhurt when found.

**Table 3:**  
**Despondents - analysis by location**

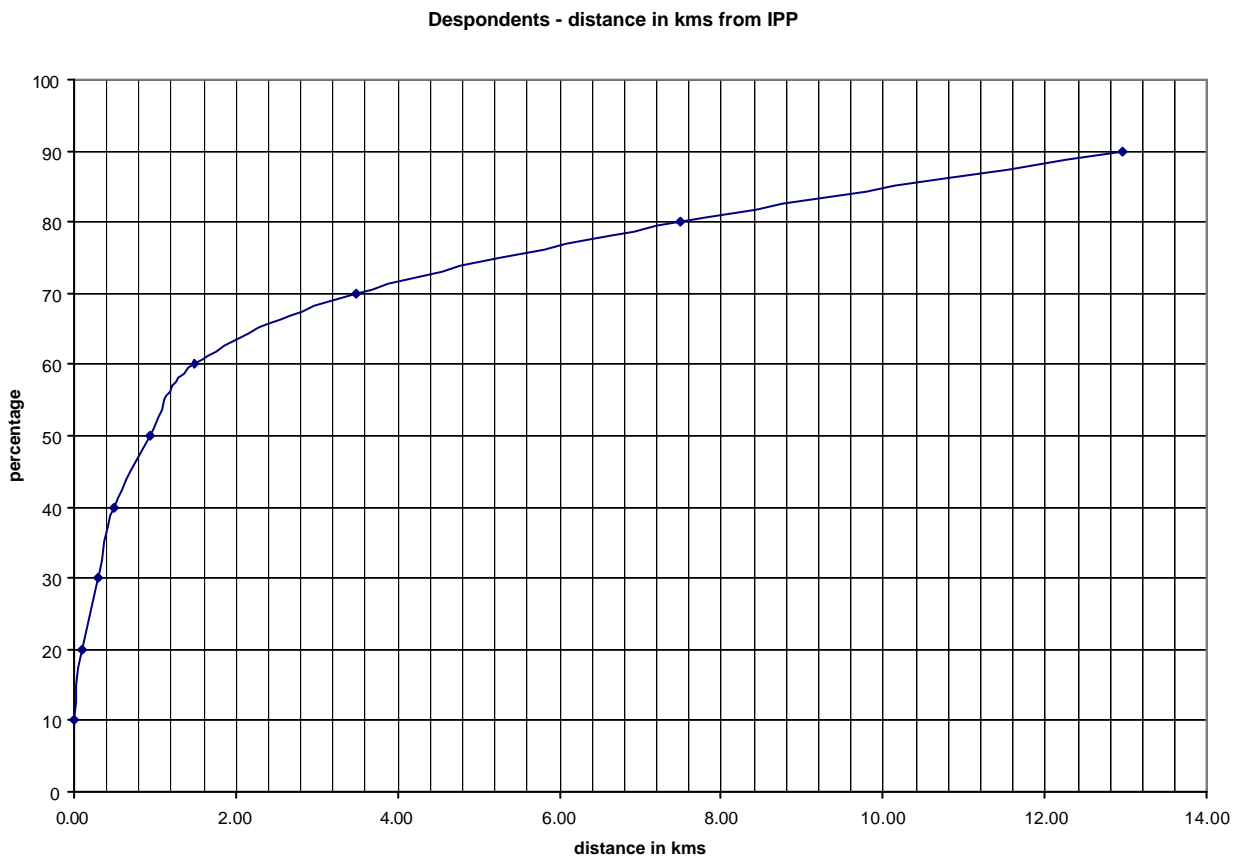
Location of find	number	percentage
Water/ water's edge	14	20
forest / woodland	13	19
Habitation	10	14
building / shelter	8	11
Road	5	7
stream / ditch	5	7
forest edge / clearing	4	6
open ground	4	6
no trace	4	6
path / track	3	4
Wall / fence line	0	0
Total	70	100



These proportions are extremely unlikely to have occurred by chance. In other words you need to be aware of the relatively high numbers found in locations classed as water / water's edge and forest / woodland.

**Table 4:**  
**Despondents - analysis by distance found from IPP**

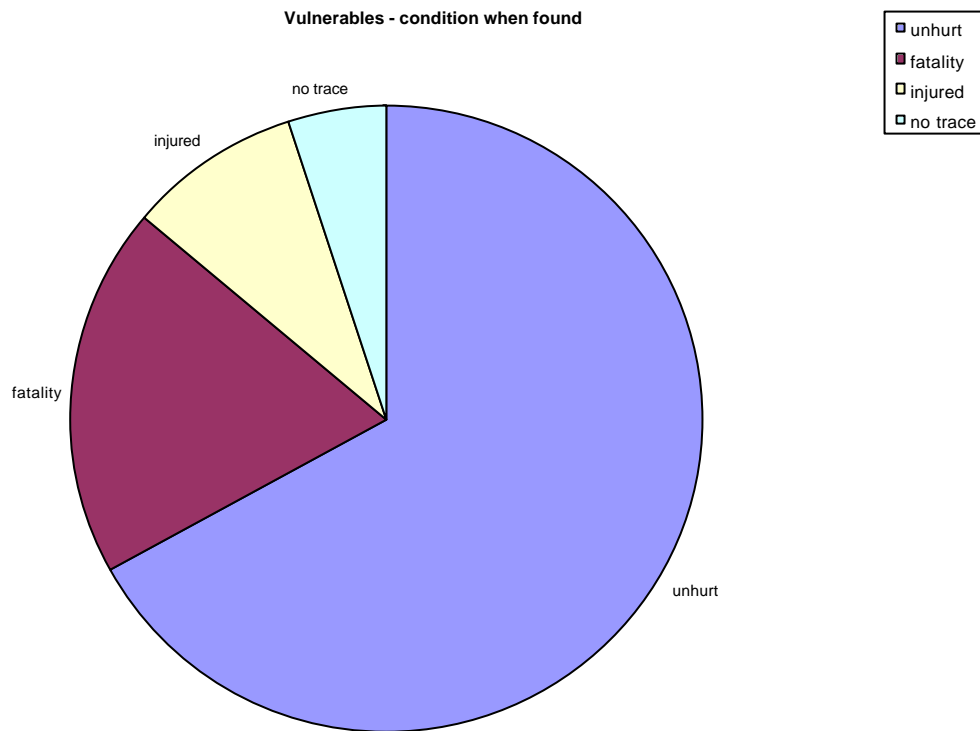
Percentage	distance in kms
10	0.00
20	0.10
30	0.30
40	0.50
50	0.95
60	1.50
70	3.50
80	7.50
90	12.95
100	105.80



**B. Vulnerables - sample size 57**

**Table 5:  
Vulnerables - analysis by subject's condition when found**

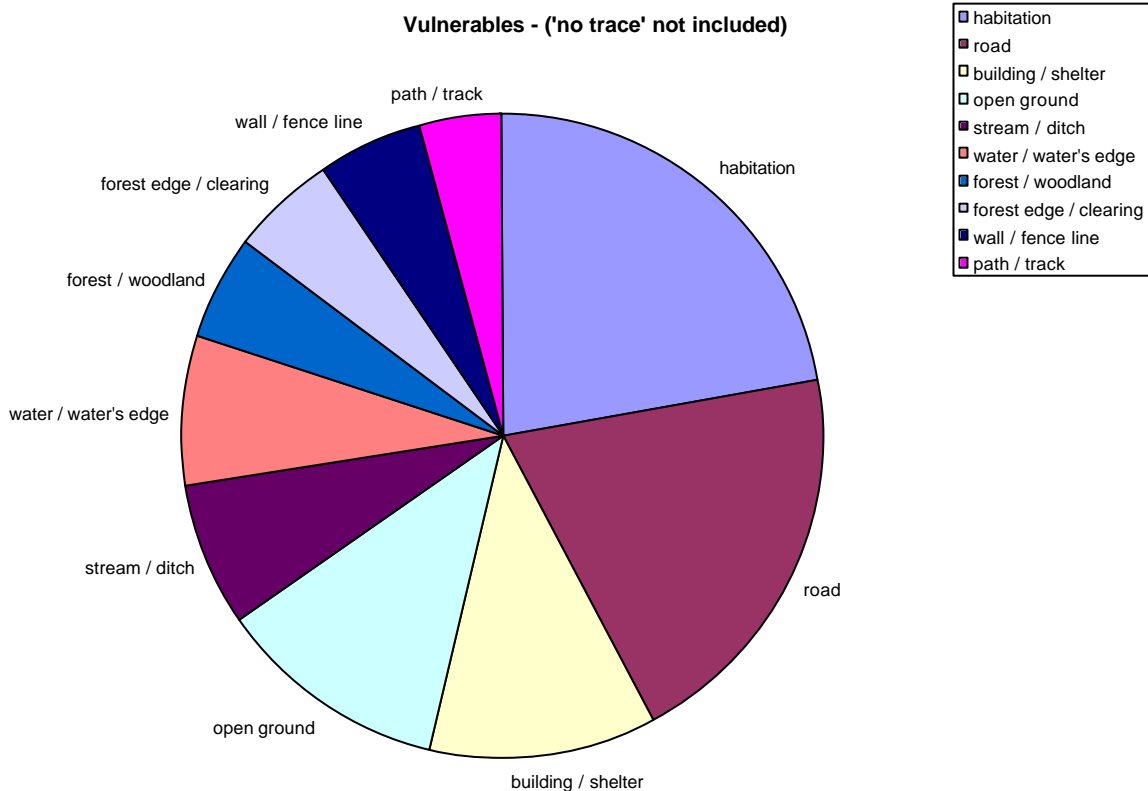
condition when found	number	percentage
unhurt	38	67
fatality	11	19
injured	5	9
no trace	3	5
total	57	100



These proportions could possibly have occurred by chance - they are not significantly different from the population as a whole.

**Table 6:**  
**Vulnerables - analysis by location**

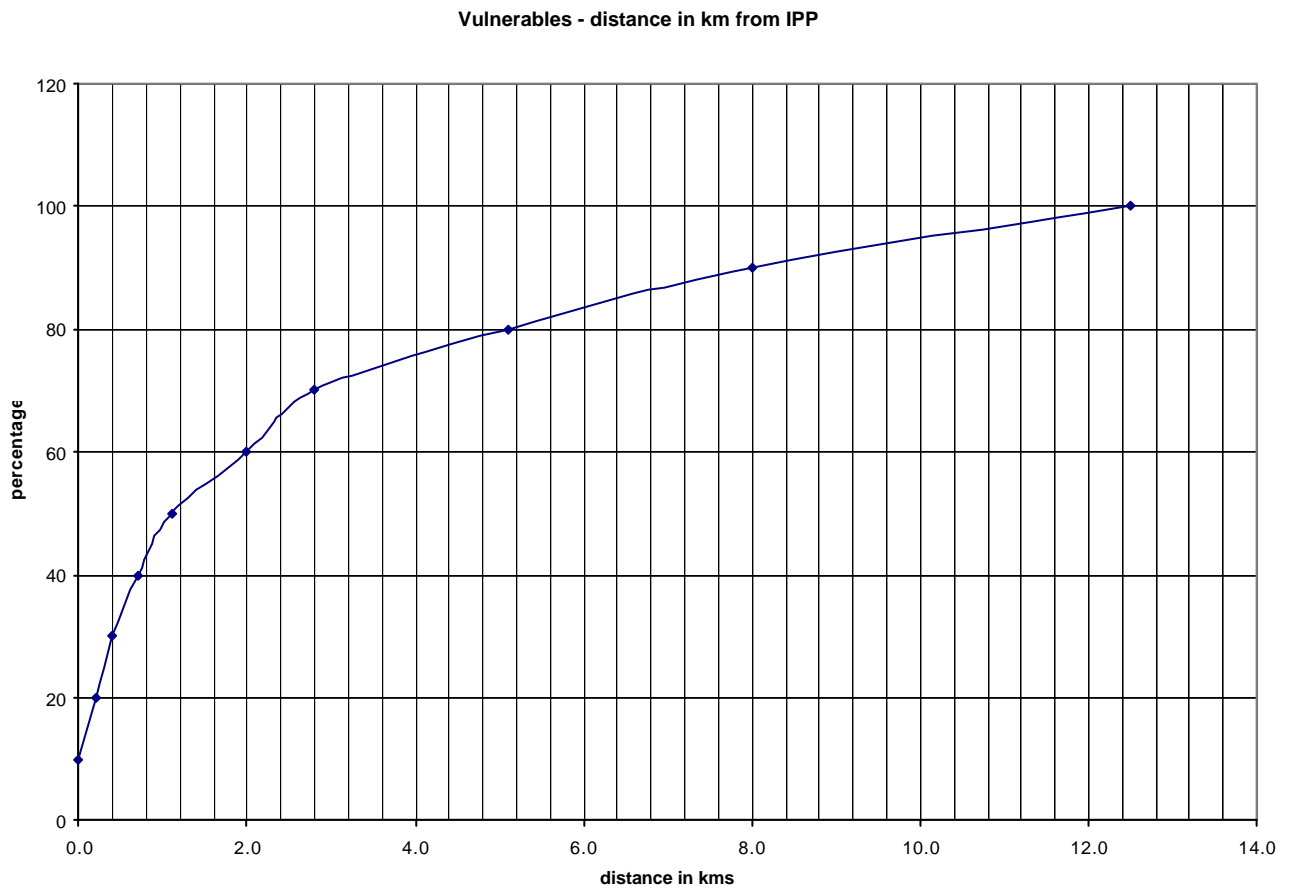
location of find	number	percentage
Habitation	12	21
Road	11	19
building / shelter	6	11
open ground	6	11
stream / ditch	4	7
Water / water's edge	4	7
forest / woodland	3	5
forest edge / clearing	3	5
wall / fence line	3	5
no trace	3	5
path / track	2	4
Total	57	100



These proportions are very unlikely to have occurred by chance. In other words you should be aware of the relatively high numbers found in habitation and on roads (as opposed to paths or tracks).

**Table 7:**  
**Vulnerables - analysis by distance found from IPP**

percentage	distance in kms
10	0.0
20	0.2
30	0.4
40	0.7
50	1.1
60	2.0
70	2.8
80	5.1
90	8.0
100	12.5



Categories partially reported - the only category to be partially reported is hikers / walkers

**C. Hiker / walker - sample size 22**

**Table 8:**  
**Hiker / walker: analysis by subject's condition**

<b>condition when found</b>	<b>number</b>	<b>percentage</b>
unhurt	19	86
others	3	14
total	22	100

**Table 9:**  
**Hiker / walker: analysis by location**

<b>location of find</b>	<b>number</b>	<b>percentage</b>
open ground	7	32
path / track	5	23
building / shelter	4	18
road	3	13.5
others	3	13.5
total	22	100

**Table 10:**  
**Hiker / walker: analysis by distance found from IPP**

<b>percentage</b>	<b>distance in kms</b>
25	0.9
50	2.4
75	4.5
100	25.3

Categories with limited reporting - the only category to have limited reporting is miscellaneous.

**D. Miscellaneous - sample size 13**

**Table 11:  
Miscellaneous - analysis by subject's condition when found**

<b>condition when found</b>	<b>number</b>
unhurt	6
fatality	4
others	3
total	13

**Table 12:  
Miscellaneous - analysis by location**

<b>Location of find</b>	<b>number</b>
Water / water's edge	5
Path / track	2
no trace	2
Building / shelter	1
Forest / woodland	1
habitation	1
road	1
others	0
total	13

**Table 13:  
Miscellaneous - analysis by distance found from IPP**

<b>Percentage</b>	<b>distance in kms</b>
20	0.2
80	4.0

## **E. Categories not reported**

Eight of the twelve categories did not contain sufficient data to warrant any kind of analysis. Of these, the categories 'child 7 to 12', 'organised party' and 'youth 13 to 16' look likely to contain sufficient data to allow for some kind of analysis for the 2002 MRC conference. The remaining five categories contained very little data.

### **Comments**

1. An overall sample size of 195 compares favourably with Missing Person Behaviour statistics already published, notably Syrotuck (229) and Hill (252, of which 100 were hunters). At the current rate, by around 2003 the MRC Missing Person Behaviour database will perhaps be the largest in existence available for general use.
2. This is not a static situation. Not only is the database growing all the time but also its users will become more experienced at using the information. The situation may arise therefore whereby the end user could suggest ways in which the statistics may be presented in the future.
3. The authors have been particularly interested in attaching some measure of significance to the analysis, and have tried to make this aspect available to as many users as possible. Comments and suggestions would be welcome.
4. The report has avoided comparing "our results" with those from other databases. That was not the point of the exercise.
5. To restate the obvious: the level of confidence that the end user should have in any result arising from this study is directly related to the sample size. The greater the volume of data then the greater should be our confidence in the scenarios created from the derived statistics. Your incident reports plus the Missing Person Behaviour report are the only way we can achieve this.

Dave Perkins, Pete Roberts and Ged Feeney  
November 2001

## Appendix 1 Missing Person Behaviour Study - Definitions

### 1. **Subject Category** - of the missing person(s).

- Child (1 to 6 yr.) - refers to child's chronological age only
- Child (7 to 12 yr.) - refers to child's chronological age only
  - Climber - on or off route, accessing into or out of the climb.
- Despondent - anyone where there is evidence that they have deliberately disappeared as a result of clinical depression or intention to harm themselves.
- Fellrunner - either as a competitor in an event, training or recreation, including orienteering.
- Hiker / walker - any form of recreational walker, of whatever length, involving persons 17 yr. or older.
- Miscellaneous - any other use of the outdoors not included in the earlier categories - photographers, mushroom pickers, bird-watchers etc.
- Mountain Biker - where the bike was the main means of transport, on or off-road.
- Organised Party - a party with a recognised leader or purpose.
  - Skier - If so equipped, including the walk in and out
- Vulnerable - anyone who can be described as having significant mental impairment e.g. mentally handicapped, dementia sufferers (senile or Alzheimer's), sufferers of psychoses.
- Youth (13 to 16 yr.) - refers to child's chronological age only

### 2. **Subject Condition** - state of subject when found, or, if still missing when the search was suspended

- Fatality - dead when found
- Injured - required significant medical treatment when found
- Unhurt - did not require significant medical treatment when found
- No Trace - not located, outcome not known

### 3. **Distance from IPP** - Initial Planning Point - the geographical point at which the search planning starts. This could be the Point Last Seen (PLS) or the Last Known Position (LKP). It could be

- either (a) distance measured directly (straight line) on a map in Kilometres correct to 1 dec. pl.
- or (b) using the full OS Grid Reference (of 2 letters + 6 digits) for both the Grid Ref. of IPP and the location where subject found

### 4. **Location of Find** - the feature that best describes the location of the find

- Building / Shelter - any man-made structure not usually used for human habitation
- Forest / Woodland - forest, plantation where progress is difficult
- Forest Edge/Clearing - open woodland
  - Habitation - building usually inhabited
- Open Ground - may be sheltering in natural features
- Path / Track - may be vehicular but not metalled
  - Road - Metalled, classified or unclassified
- Stream / Ditch - drainage line that can easily be crossed on foot
- Wall / Fence Line - any man-made structure enclosing land.
- Water/ Water's Edge - in or surrounding a body of water that could not be crossed easily on foot.

## Appendix 2 - Statistical Significance and Reliability of Information

There are difficulties in presenting statistical information in a way that satisfies both the specialist and non-specialist reader. Statisticians use the same terminology (for example significance and confidence) as the rest of us, but while statisticians use these terms in a precise and particular way, the rest of us generally do not. But if results are reported using proper statistical conventions, then many people are excluded from sharing the information.

As a compromise the authors have tried to express in words how likely it is that a particular result could have occurred by chance – in fact, this is exactly what statisticians do but they do it using numbers. In each case, where the level of reporting demands it, the data for a particular category has been compared with the rest of the data in the database. For example, the proportion of vulnerables found in each type of location was compared with the proportions for all the other people in the database. The question then asked was 'how likely is it that the difference between the two sets of figures came about purely by chance?' Generally speaking, the greater the difference then the less likely it is to have happened by chance. This is called the level of significance, and determines the wording used in the report by inserting the appropriate phrase into the sentence "these proportions ... .. have occurred by chance".

significance level	likelihood that the two populations are the same	phrase to insert
$p > 0.10$	greater than 10%	could possibly
$0.05 < p < 0.10$	between 5% and 10%	are unlikely to
$0.01 < p < 0.05$	between 1% and 5%	are very unlikely to
$0.001 < p < 0.01$	between 0.1% and 1%	are highly unlikely to
$p < 0.001$	less than 0.1% chance	are extremely unlikely to

The greater the degree of 'unlikelihood' the more significant is the result. If this proves to be unsatisfactory then the authors will look for another way of reporting significance.