



The U.K. Missing Person Behaviour Study

August 2005

by

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Abstract

This is the fourth annual report to come from the U.K. Missing Person Behaviour Study. It seeks to provide information to assist with managing searches for missing persons.

Until 2001, virtually all the missing person behaviour information available in the U.K. was based on incidents in North America. In 2000, the MRC started collecting data specifically for the creation of U.K. statistics from MR teams and other organisations in Great Britain and Ireland. The data is collected using a standard form to report incidents involving searches for missing persons.

For this report there has been sufficient data to split the category 'vulnerables' into more meaningful groups and the category 'despondents' has been analysed in a way that takes into account the characteristics of the missing person.

Document History

Interim Report - November 2001

Full Report - September 2002

Full Report - January 2004

Interim Report - July 2005

Full Report - August 2005

"Not all those who wander are lost." JRR Tolkien

Further copies of these documents can be downloaded from:-

<http://www.mountain.rescue.org.uk/stats.html>

<http://www.searchresearch.org.uk/ukmpbs.html>

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MISSING PERSON BEHAVIOUR STATISTICS FOR THE UNITED KINGDOM - August 2005

by Dave Perkins & Pete Roberts (Northumberland National Park SRT, The Centre for Search Research) and Ged Feeney (Penrith MRT, MR England & Wales Statistics Officer)

BACKGROUND

Since the MR conference at Lancaster in October 2000, teams have been offered the opportunity to fill in an extra sheet each time they send in an MR E&W Incident Report, either electronically or on paper. This extra sheet is the MR E&W Missing Person Behaviour Report, and this facility has been extended to other interested parties with varying degrees of uptake. It is used to collect information relating to incidents taking place within the UK, N. Ireland and Eire 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. The U.K. Missing Person Behaviour Study is now sufficiently well established for its results to rectify that state of affairs.

The authors recommend that this study is read in conjunction with 'An Aide to the Search Manager'. Copies can be obtained from the MR E&W and the Centre for Search Research web sites (see page 2).

REPORTING THE RESULTS OF THE ANALYSIS

Missing Person Behaviour Statistics tell us what similar people have done in similar situations in the past. They enable us to construct scenarios that are both meaningful and possess a known degree of certainty in our attempt to find the person that we are currently looking for. It is reasonable to suggest that the more data we have about what has happened in the past then the more reliable will be our predictions as to what has happened to that person. In other words, using the data available in this report we should have more confidence in scenarios that we construct to help us to search for a missing hiker (99 reported incidents) than for a missing mountain biker (2 reported previous incidents).

By extension, we feel that the level of reporting should reflect the number of incidents being reported. Categories with a large number of reported incidents can stand detailed analysis whereas categories with fewer reported incidents cannot.

This year's report will confine itself to four basic statistics for each category; these are:-

- fatality rate
- the outcome - the missing person's condition if located
- location where found
- distance found from the Initial Planning Point (IPP)

Fatality rate is reported as a separate statistic this year; this is because (a) it is highly variable and (b) the likelihood that the missing person is immobile and unresponsive is of value to the Search Manager.

For categories with more than 50 reported incidents the fatality rate is given as a percentage of all incidents in the category; the distribution by outcome is given in numbers and percentages; the distribution by location is given in numbers and percentages; the distribution of distances from the IPP is given in increments of 10%.

For categories with more than 20 but less than 50 reported incidents the fatality rate is given as a percentage of all incidents in the category; the distribution by outcome is given in numbers and percentages; the distribution by location is given in numbers and percentages; the distribution of distances from the IPP is given in increments of 20%.

For categories with more than 10 but less than 20 reported incidents the fatality rate is given as a percentage of all incidents in the category; the distribution by outcome is given without percentages; the distribution by location is given without percentages; the distribution of distances found the IPP is given in increments of 25%.

For categories with less than 10 reported incidents no analysis has been done - the original data is shown. It is vital that users realise that it is dangerous to try to draw firm conclusions from this data; it is presented for guidance only and should be used with great care.

The format of this year's report is changed slightly from previous years. It is hoped that the clarity of the information presented is improved by these changes.

STATISTICAL SIGNIFICANCE

Our intention has always been to try to report those items of information within the general reporting framework that were 'significant', or meaningful, or told the user something useful about the type of person they were looking for. We have tried to avoid wherever possible both the use of technical language and the unnecessary duplication of results. For example, if there is a discernable difference between male and female behaviour within a category then we report males and females separately and give some indication as to the scale of the difference; if there is no discernable difference then we say so and report the combined results.

The reader is referred to Appendix 2 for a more detailed discussion of the terminology involved.

GENERAL COMMENTS

1. The authors are acutely aware that without the efforts of all those who send in Missing Person Behaviour Reports there would be no U.K. Missing Person Behaviour Study. We are grateful for all your contributions.
2. Overall statistics that may be of interest are as follows:

Category	2005 (a)	2004 (b)
*Alzheimer's sufferer	52	
child aged 1 to 6	9	9
child aged 7 to 12	40	30
climber	2	2
*dementia sufferer	47	
despondent	283	198
*developmental problems	24	
fell runner	4	3
hiker / walker	99	77
miscellaneous	17	30
mountain biker	2	2
organised party	20	14
*other vulnerables	49	
*psychological illness	33	
skier	0	0
vulnerable	208	168
youth aged 13 to 16	27	21
total	708	554

Table 1: numbers of reported incidents, all categories, to (a) February 2005 and (b) November 2003

Notes:

- a. The cut-off dates given for table 1 apply throughout this report.
- b. The 2005 total for vulnerables is the total of the starred categories; numbers for these categories are not shown separately for 2004. The category 'vulnerables' is not reported as such in this report.
- c. Some records in the category miscellaneous have been assigned to other categories for the 2005 report.

Gender	2005		2004	
	n	%	n	%
male	434	61	330	60
female	181	26	143	26
not recorded	77	11	70	13
mixed group	16	2	11	2
total	708		554	

Table 2: subjects by gender, all searches

Condition	2005		2004	
	n	%	n	%
unhurt	444	63	347	63
fatality	163	23	125	23
injured	64	9	50	9
no trace	37	5	32	6
total	708		554	

Table 3: subject condition when located, all searches

Condition	% male total		% female total	
	2005	2004	2005	2004
unhurt	60	60	66	65
fatality	25	25	18	18
injured	9	9	12	12
no trace	6	6	4	5
total	434	181	330	143

Table 4: percentage subject outcome by gender, all searches

Distance (kms)	2005	2004
	cumulative %	cumulative %
less than 0.5	22	22
less than 1.0	38	37
less than 2.0	56	55
less than 5.0	77	77

median distance 1.3 kms 1.5 kms

Table 5: distance found from IPP, all searches, cumulative %

Tables 2 to 5 show that the situation is remarkably static from year to year; part of this is no doubt due to the fact that a fair amount of data has already accumulated and one year is unlikely to bring about large swings in the overall proportions, but it also reflects the fact that the data from one year looks pretty much like another.

- There are probably many more incidents involving missing persons than are recorded here. The vast majority are dealt with by the police and do not involve any of the organisations that report their incidents to the MR E&W. Until such time as there is a more comprehensive system for collecting the appropriate data, the user will need to do the same as we do in assuming that the behaviour of those individuals who do get reported is representative of the population as a whole.

CATEGORY REPORTS

Alzheimer's sufferer

a. **Definition** - a person diagnosed as suffering from dementia of Alzheimer's type

b. **All searches** n = 52

	female	male	not reported	total
urban	6	15	7	28
non-urban	5	18	1	24
total	11	33	8	52

Table 6: Alzheimers - searches by environment and gender

c. **Fatality rate** - the fatality rate for urban searches (32%) is significantly higher than non-urban searches (13%). This difference is highly unlikely to have occurred by chance. There is no discernable gender difference.

d. **Outcome** - condition if found

	urban		non-urban	
	n	%	n	%
unhurt	15	54	17	71
fatality	9	32	3	13
injured	3	11	4	17
no trace	1	4	0	0

Table 7: Alzheimers - outcomes, urban v non-urban

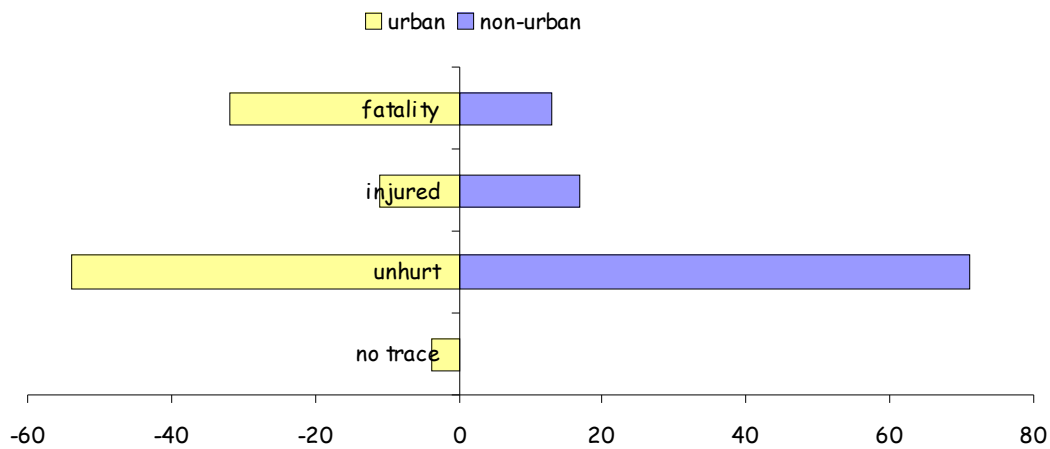


Chart 1: Alzheimers - Outcomes, urban v non-urban (%)

e. **Location found** - there is no discernable difference between urban and non-urban searches with regard to the location at which the missing person was found; likewise there is no discernable gender difference. The following additional information was provided with regard to two incidents in which the location was reported as 'open ground'; these were "stuck in dense undergrowth" and "on a park bench". The statistics shown are for all searches.

	n	%
road	12	24
open ground	10	20
habitation	9	18
water / water's edge	4	8
building / shelter	3	6
Forest / woodland	3	6
stream / ditch	3	6
wall / fence line	3	6
forest edge / clearing	2	4
path track	1	2
no trace	1	2

Table 8: Alzheimers - location found, all searches

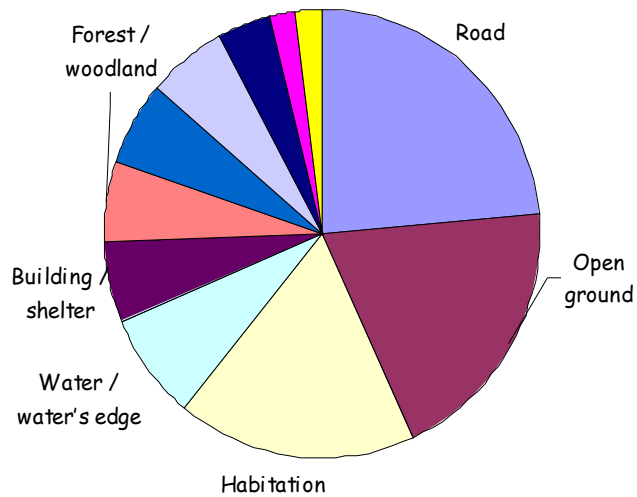
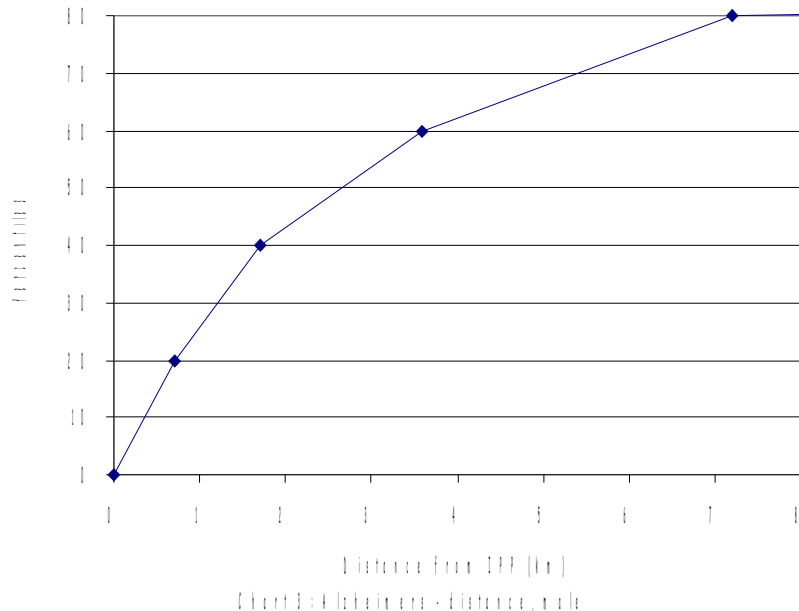


Chart 2: Alzheimers - Location found

- f. **Distance found from IPP** - Alzheimer's sufferers tend to be found further from the IPP than other categories of missing person; 76% of them were found at distances of 1 km or more from the IPP compared to 51% of the other categories. There is no discernable difference between urban and non-urban searches but there is a significant difference between males and females - males tend to be found at greater distances than females; this difference is very unlikely to have occurred by chance.

%ile	km
20	0.7
40	1.7
60	3.6
80	7.2
100	84

Table 9: Alzheimers - distances from IPP, males



%ile	kms
25	0.8
50	1.1
75	3.7
100	4.2

Table 10: Alzheimers
- distances from IPP,
females

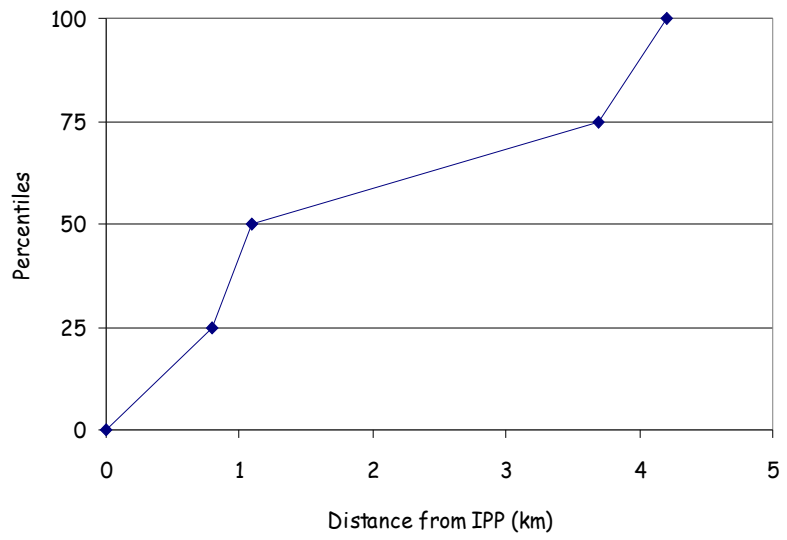


Chart 4 : Alzheimers - distance, females

Child aged 1 to 6**Caution:**

Users need to be aware that this category contains insufficient data to be able to draw any firm conclusions. The information given has not been processed in any way. It is not likely to be as reliable as a basis for prediction as the information given in categories with larger volumes of data. It should be used with caution.

a. **Definition** - refers to the child's chronological age only

b. **All searches** n = 9

	female	male	not reported	total
urban	2	2	1	5
non-urban	0	3	1	4
total	2	5	2	9

Table 11: child aged 1 to 6 - searches by environment and gender

c. **Fatality rate** - no fatalities were reported.

d. **Outcome** - condition if found. All persons reported in this category were found unhurt.

e. **Location found**

	n
building / shelter	2
habitation	2
open ground	2
stream / ditch	1
wall / fence line	1
water / water's edge	1
all other locations	0

Table 12: child aged 1 to 6 - location found, all searches

The following additional information was provided with regard to one incident in which the location was reported as 'open ground': "sheltering under bushes".

f. **Distance found from IPP** - these were:

0.1, 0.4, 0.5, 0.5, 0.5, 0.8, 1.0, 1.1 and 1.8 km

Child aged 7 to 12

- a. **Definition** - refers to the child's chronological age only
- b. **All searches** n = 40

	female	male	not reported	total
urban	10	12	2	24
non-urban	3	13	0	16
total	13	25	2	40

Table 13: child aged 7 to 12 - searches by environment and gender

- c. **Fatality rate** - the fatality rate for urban searches (no reported fatalities) is significantly lower than the fatality rate for non-urban searches (13%); this difference is very unlikely to have occurred by chance. There is no discernible gender difference.
- d. **Outcome** - condition if found.

	urban		non-urban	
	n	%	n	%
fatality	0	0	2	12
injured	0	0	0	0
unhurt	24	100	14	88
no trace	0	0	0	0

Table 14: child aged 7 to 12 - outcome, urban v non-urban

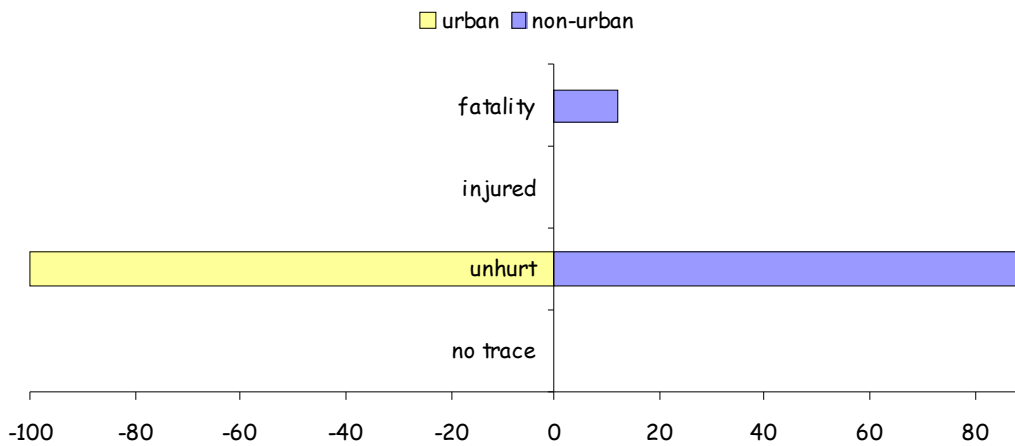
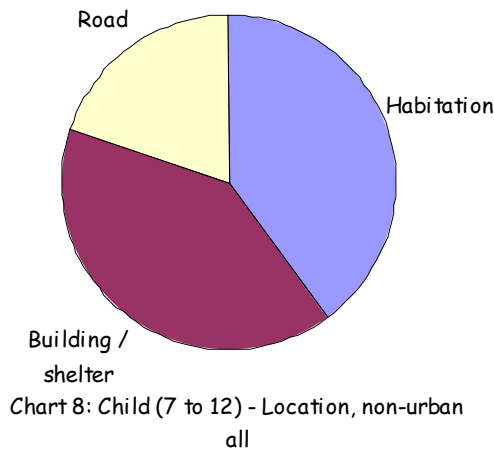
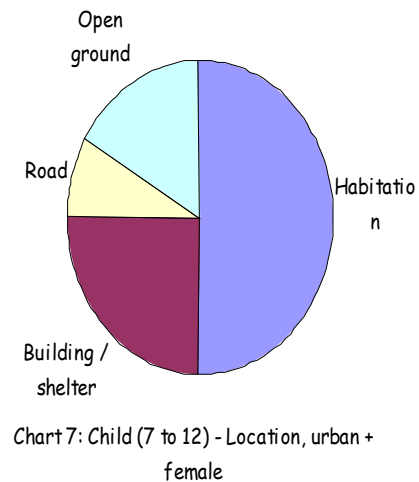


Chart 5: Child (7 to 12) - Outcomes, urban v non-urban (%)

- e. **Location found** - the locations at which missing persons in this category are found in urban searches are significantly different from the locations at which they are found in non-urban searches; this difference is extremely unlikely to have occurred by chance. In addition, in urban searches there is a significant difference between the locations at which missing males are found compared with missing females; this difference is unlikely to have occurred by chance. No additional information was provided with regard to incidents in which the location was reported as 'open ground'.

	urban		non-urban
	males	females	all searches
	n	n	n
habitation	3	6	4
building / shelter	1	3	4
road	4	1	2
open ground	2	2	0
forest / woodland	3	0	0
water / water's edge	3	0	0

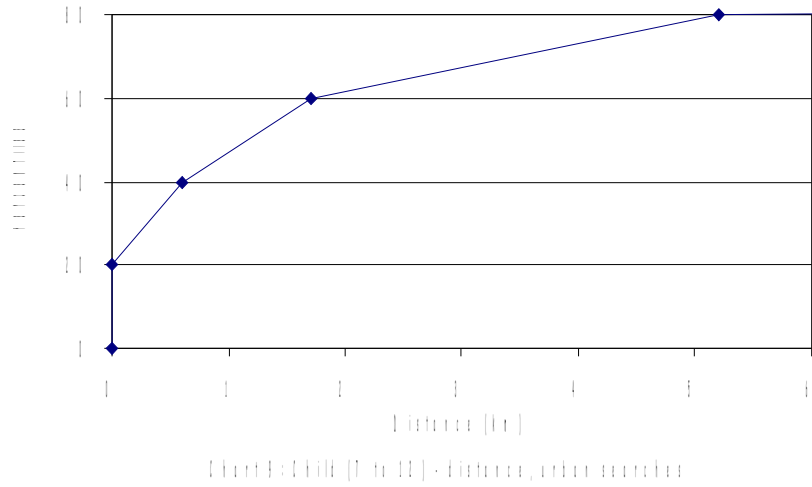
Table 15: child aged 7 to 12 - location found.



- f. **Distance found from IPP** - there is a significant difference between urban and non-urban searches; this difference is very unlikely to have occurred by chance. There is no discernible gender difference.

%ile	km
20	0.0
40	0.6
60	1.7
80	5.2
100	100

Table 16: child aged 7 to 12 - distances found from IPP, urban



%ile	km
25	0.3
50	1.0
75	2.1
100	15

Table 17: child aged 7 to 12 - distances found from IPP, non-urban

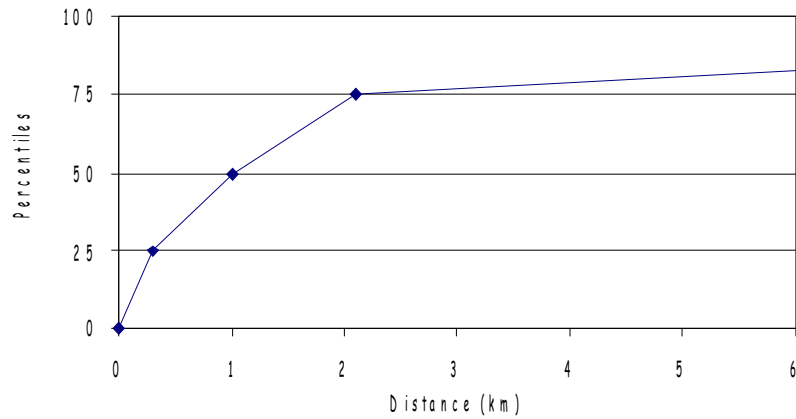


Chart 10: Child (7 to 12) - distance, non-urban searches

Climber

Caution:

Users need to be aware that this category contains insufficient data to be able to draw any firm conclusions. The information given has not been processed in any way. It is not likely to be as reliable as a basis for prediction as the information given in categories with larger volumes of data. It should be used with caution.

- a. **Definition** - on or off route, accessing into or out of the climb
- b. **All searches** n = 2
- c. **Fatality rate** - 1 fatality out of 2 reported incidents
- d. **Outcome** - condition if found: 1 fatality, 1 unhurt
- e. **Location found** - habitation 1, open ground 1
- f. **Distance found from IPP** - these were 0.8 km and 27 km

Dementia (general)

a. **Definition** - a person diagnosed as suffering from dementia other than dementia of Alzheimer's type

b. **All searches** n = 47

	females	males	not reported	totals
urban	8	13	2	23
non-urban	8	13	3	24
totals	16	26	5	47

Table 18: dementia (general) - searches by environment and gender

c. **Fatality rate** - there is no discernible difference between the fatality rates for urban and non-urban incidents. However, the fatality rate for males (23%) is significantly higher than for females (6%); this difference is unlikely to have occurred by chance.

d. **Outcome** - condition if found: the statistics given are for all searches

	female		male	
	n	%	n	%
fatality	1	6	6	23
injured	3	19	5	19
unhurt	10	63	15	58
no trace	2	13	0	0

Table 19: dementia (general) - outcome by gender

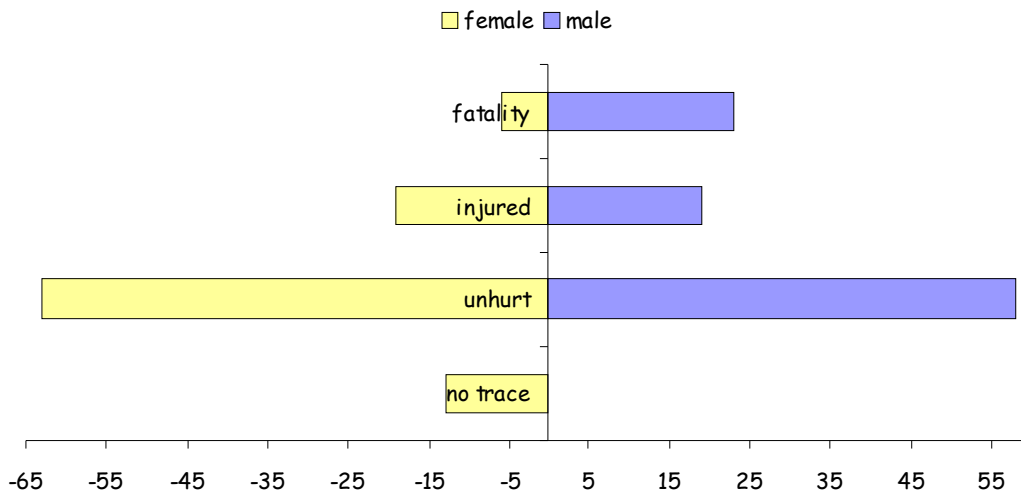


Chart 11: Dementia (general) - Outcomes by gender(%)

- e. **Location found** - there is no discernible difference between urban and non-urban searches or between females and males; the statistics given are for all searches

	n	%
wall / fence line	11	23
open ground	8	17
path / track	7	15
road	7	15
habitation	4	9
building / shelter	2	4
forest / woodland	2	4
no trace	2	4
stream / ditch	2	4
water / water's edge	2	4

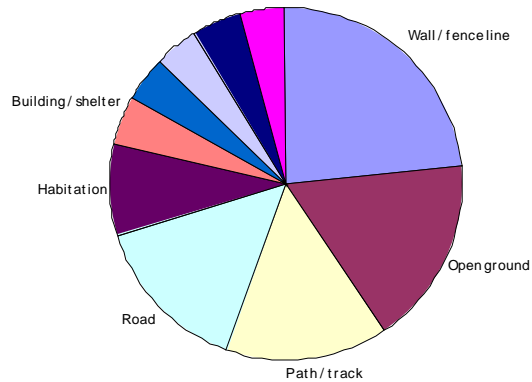


Table 20: dementia (general) - location found, all searches

Chart 12: Dementia (general) - Location found

The following additional information was provided with regard to one instance in which the location was given as 'open ground': "in a patch of overgrown nettles and grass"

- f. **Distance found from IPP** - there is no significant difference between urban and non-urban searches or between females and males; the statistics given are for all searches

%ile	km
20	0.4
40	0.7
60	1.1
80	3.1
100	16

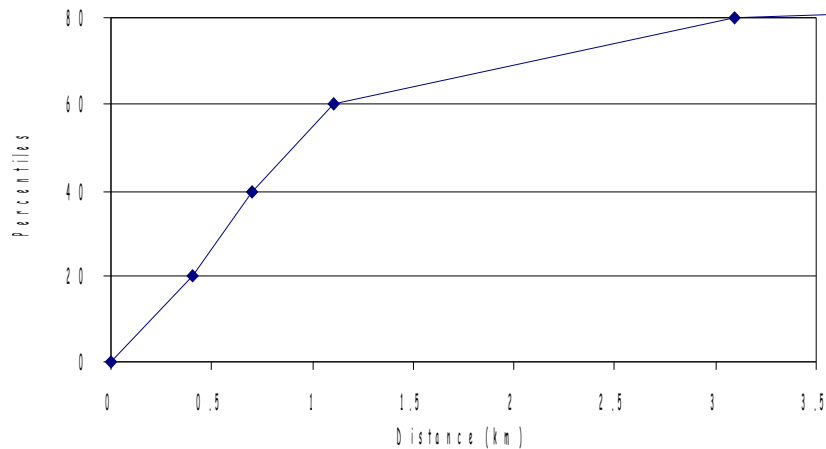


Table 21: dementia (general) - distance found from IPP, all searches

Chart 13: Dementia (general) - distance

Despondents

- a. **Definition** - either a person who has deliberately disappeared, or whose disappearance is a consequence of one or more of the following:-
- the abuse of drugs or alcohol; the drugs involved might have been obtained on prescription
 - depression, either diagnosed or suspected
 - personal distress or stress; this might have been brought about by ill-health, or the missing person is described by at least one of the following:
 - is thought to be a potential suicidal or a self-harmer
 - has a history of self-harm

These five characteristics come from the analysis of the text fields in submitted reports; they are the most frequently mentioned characteristics of the missing person. They are not mutually exclusive. Since no prompting was given on the data capture document this information is entirely dependent on what the individual doing the reporting has considered worth mentioning; for this reason we feel that any statistic that we give concerning these characteristics should be treated as a guideline rather than an absolute. However, 88% of the submitted reports for this category have included a reference to at least one of these characteristics - this high level of reporting leads us to believe that where a characteristic was present then it was likely to have been reported.

- b. **All searches** n = 283

- (i) by terrain type and gender

	females	males	other	total
farmland	30	56	2	88
urban	23	35	15	73
woodland	9	27	2	38
moorland / upland	4	24	5	33
water margin	6	23	3	32
plantation	2	11	0	13
crag / broken ground	1	4	1	6
total	75	180	28	283

Table 22: despondents - searches by terrain type and gender

- (ii) by reported characteristic and gender

	females	males	other	total
drugs or alcohol	36	76	12	124
depression	24	34	9	67
distress	18	61	4	83
possible self harm	24	52	6	82
history of self harm	16	31	4	51
none of the above	8	23	4	35

Table 23: despondents - searches by characteristics and gender

Note that the above characteristics are not mutually exclusive. The analysis will focus on the 88% of persons in this category for whom the submitted report referred to none, one or two of these characteristics. Statistics will be given with respect to either reported characteristics or terrain type, whichever is the

most appropriate. Sample sizes are mostly too small to allow for analysis by characteristic within terrain type.

c. **Fatality rate** - some missing person profiles and terrain types will indicate a fatality rate that is either significantly higher or significantly lower than the rest of the category - these are described below; the overall fatality rate for the remainder of the category is 27%.

1. for incidents in terrain type 'water margin' the fatality rate is 63%; the difference between this value and the fatality rates for all other terrain types is significant and is extremely unlikely to have occurred by chance.
2. if the missing person profile indicates that depression has been diagnosed or is suspected, but none of the other characteristics is present then the fatality rate is 57%; this is significantly different from all other despondents and is highly unlikely to have occurred by chance.
3. if the missing person profile indicates drug or alcohol abuse and none of the other characteristics is present then the fatality rate is 46%; this is significantly different from all other despondents and is very unlikely to have occurred by chance.
4. if, in addition to drug or alcohol abuse the missing person profile gives an indication of either personal distress or the likelihood of suicide / self harm then the fatality rate falls to 18%; this change in fatality rate is significant and is highly unlikely to have occurred by chance.

d. **Outcome** - condition if found

	Water Margin		Other terrain types	
	n	%	n	%
fatality	20	63	42	27
injured	2	6	14	9
unhurt	5	16	81	53
no trace	5	16	16	10

Table 24: despondents - outcome by terrain type

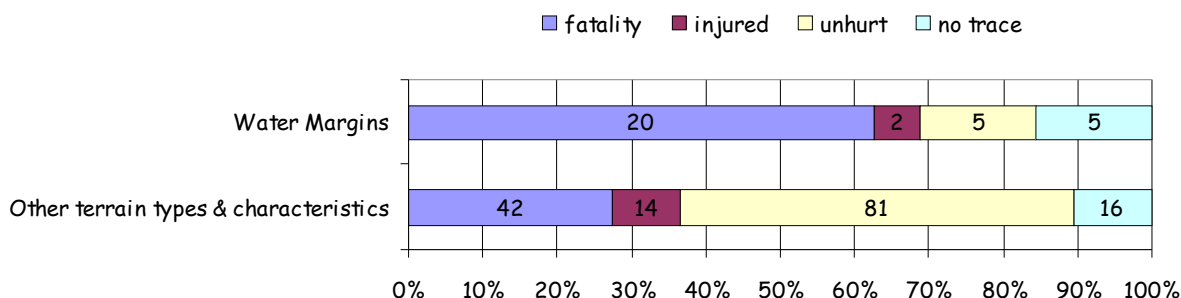


Chart 14 : Outcome by terrain type

depression only	drug or alcohol abuse only	Drug/alcohol abuse with personal distress / suicide / self-harm
-----------------	----------------------------	---

	n	%	n	%	n	%
fatality	12	57	18	46	7	18
injured	2	10	5	13	9	24
unhurt	6	29	13	33	21	55
no trace	1	5	3	8	1	3

Table 25: despondents - outcome by characteristic

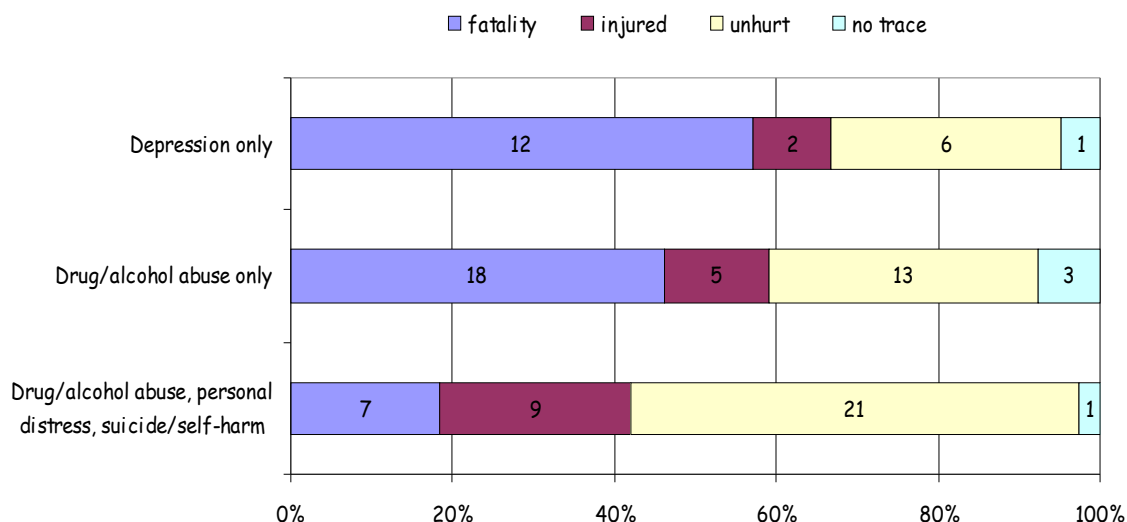


Chart 15 : despondents - Outcome by characteristics

- e. **Location found** - there are major differences between each of the reported terrain types with regard to locations at which missing despondents are found; for searches in farmland there is also a significant gender difference. There is some indication that the presence of the reported characteristics (drugs, alcohol etc) can have a bearing on the location at which the missing person is found, although there is insufficient data to allow for a full analysis of the influence of these characteristics for each terrain type. More than 10% of the reports mentioned that the missing person was found at a location that was described as being either "favoured" or "familiar" or "scenic" - there is evidence to suggest that this occurs more in some types of terrain than others and more in connection with some characteristics than others, although an element of caution is recommended here since we cannot guarantee that every occurrence was reported.

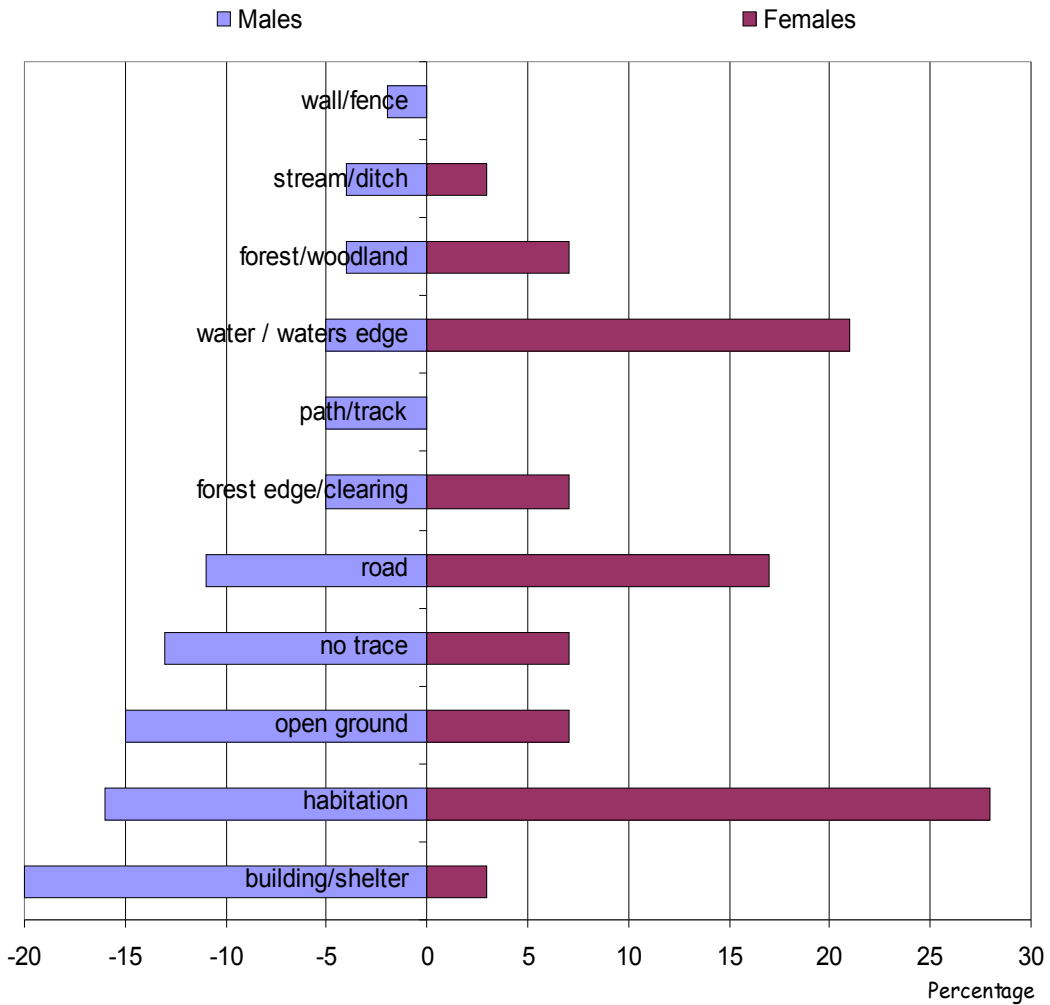
We suggest that the first step is to refer to the statistics for the type of terrain in which the search is taking place and then to look at the comments regarding the influence of the characteristics and relate those to the missing person profile. Finally, any relevant observations about favoured, familiar or scenic locations should be noted.

1. statistics by terrain type
 - a. farmland

	males		females	
	n	%	n	%
building / shelter	11	20	1	3
habitation	9	16	8	28

open ground	8	15	2	7
no trace	7	13	2	7
Road	6	11	5	17
forest edge / clearing	3	5	2	7
path / track	3	5	0	0
water / water's edge	3	5	6	21
Forest / woodland	2	4	2	7
stream / ditch	2	4	1	3
wall / fence	1	2	0	0

Table 26:despondents - location found, searches in farmland by gender



b. all other terrain types

	urban		woodland		moorland / upland		water margin	
	n	%	n	%	n	%	n	%
building / shelter	8	11	1	3	3	9	3	9
forest / woodland	2	3	15	39	5	15	3	9
forest edge / clearing	4	6	5	13	1	3	0	0
habitation	26	36	4	11	3	9	1	3
no trace	3	4	6	16	2	6	5	16
open ground	3	4	1	3	4	12	1	3
Path / track	2	3	1	3	2	6	1	3
road	7	10	1	3	6	18	3	9
Stream / ditch	1	1	2	5	2	6	0	0
Wall / fence	2	3	0	0	1	3	15	47
Water / water's edge	14	19	2	5	0	0	3	9

Table 27: despondents - location found by environment

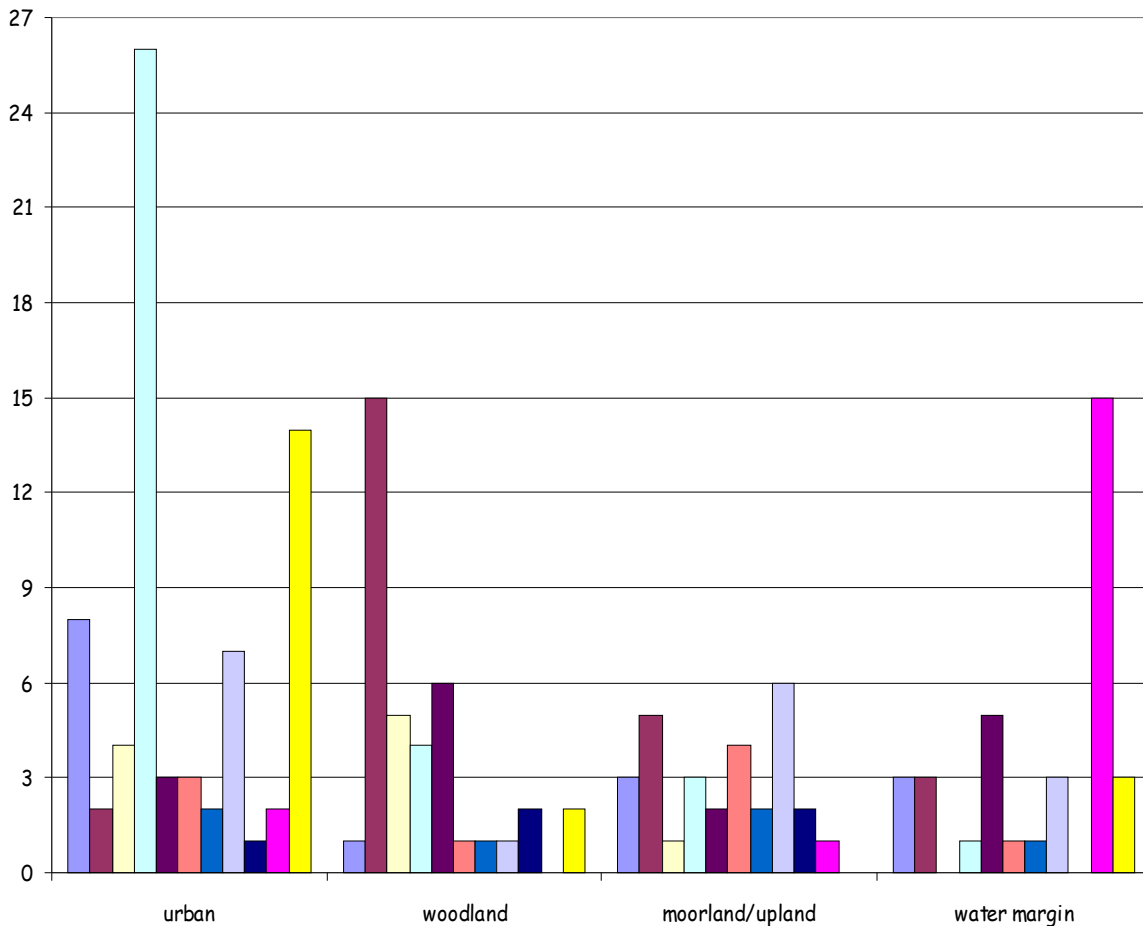
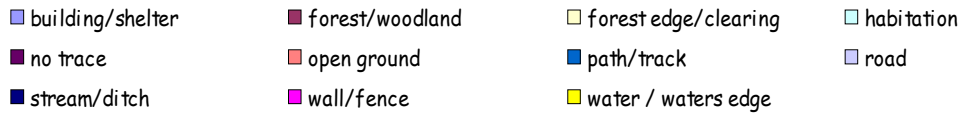


Chart 17 : Location found - all despondents by environment

2. the influence of reported characteristics

- (i) abuse of drugs or alcohol: there is a slight indication that the missing person is more likely to be found near water (streams, rivers, lakes etc) and less likely to be found on paths, tracks or roads than would otherwise be expected
- (ii) depression: there is a slight indication that the missing person is more likely to be found near water (streams, rivers, lakes etc) and less likely to be found on open ground than would otherwise be expected
- (iii) personal distress: there is a strong indication that the missing person is more likely to be found on paths, tracks or roads than would otherwise be expected
- (iv) the possibility of suicide or self harm appears to have no effect on the location, other than as described in the next section

3. favourite, familiar or scenic locations

- (i) there is strong evidence to suggest that this describes the type of location in which a missing despondent who is a potential suicide or self-harmer is most frequently found
- (ii) there is no evidence to suggest that any other kind of missing despondent either favours or avoids this type of location
- (iii) there is strong evidence to suggest that for searches in woods and plantations this is the type of location in which the missing despondent is most frequently found; this applies to a lesser degree for searches in a water margin environment
- (iv) there is no evidence to suggest that locations of this type have any bearing on searches in other types of terrain

The following additional information was provided with regard to four incidents where the location was reported as 'open ground'; "found under hawthorn bushes", "found on the edge of a cornfield", "found well hidden in bushes" and "found close to a footpath".

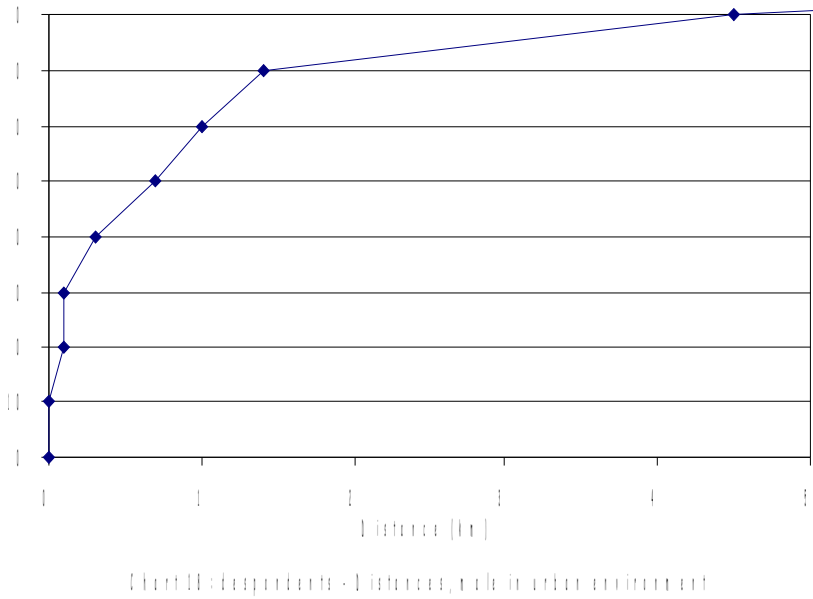
- f. **Distance found from IPP** - there are differences between most of the terrain types; in addition there is a significant gender difference for searches in urban areas. There is strong evidence to suggest that the possibility of suicide or self-harm has a bearing on the distance that the person is found from the IPP, although this issue should be treated with caution.

We suggest that the first step is to refer to the statistics for the type of terrain in which the search is taking place and then to look at the comments regarding the influence of the characteristics and relate those to the missing person profile.

1. statistics by terrain type

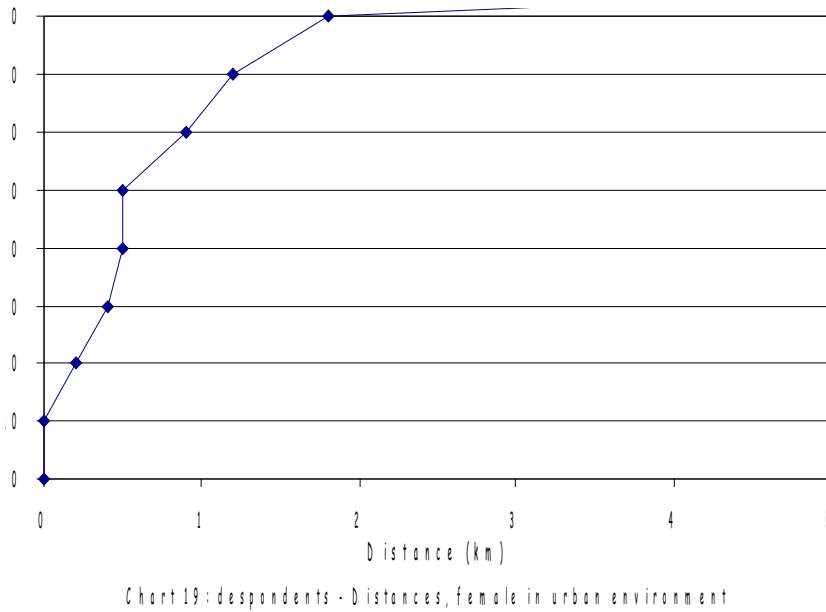
%ile	km
10	0.0
20	0.1
30	0.1
40	0.3
50	0.7
60	1.0
70	1.4
80	4.5
90	12.0
100	64.0

Table 28:
despondents -
distance found from
IPP, male in urban
environment



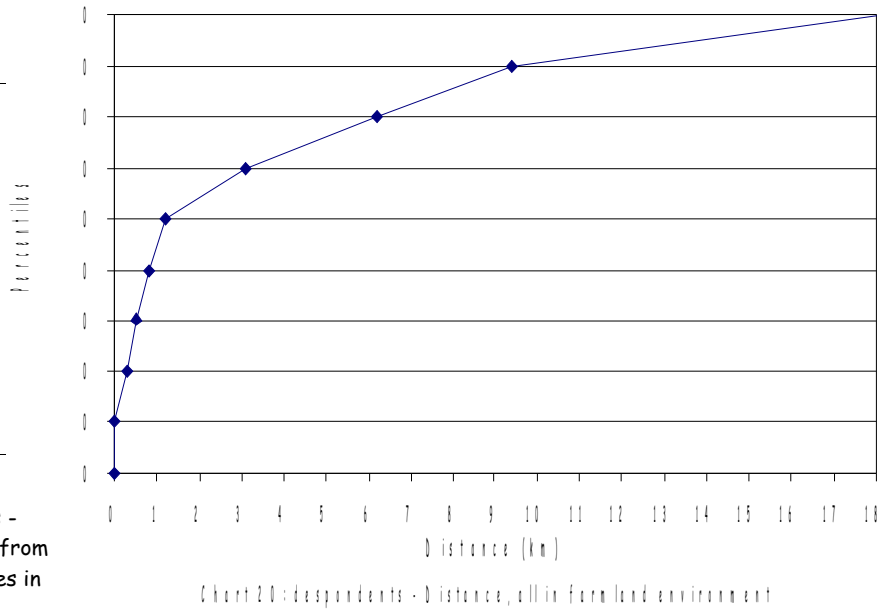
%ile	km
10	0.0
20	0.2
30	0.4
40	0.5
50	0.5
60	0.9
70	1.2
80	1.8
90	10.5
100	20.0

Table 29:
despondents -
distance found
from IPP, female
in urban
environment



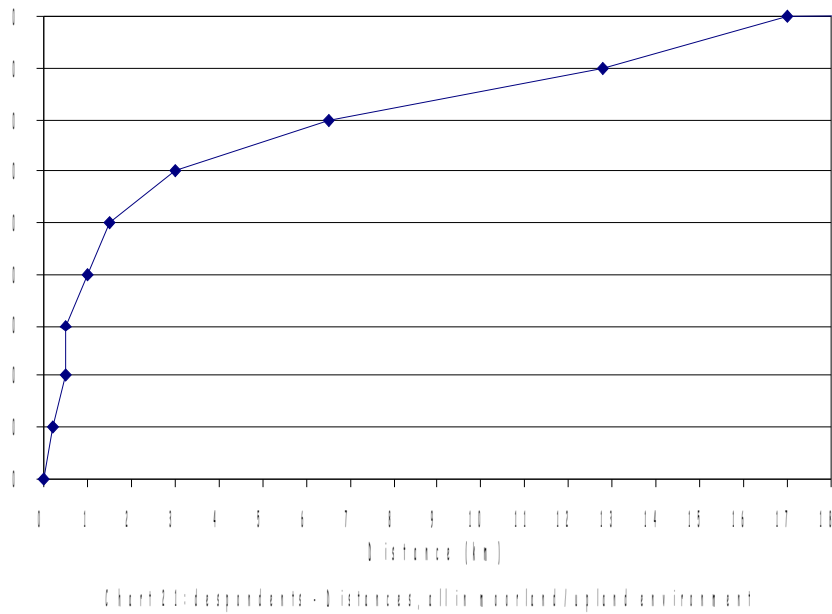
%ile	km
10	0.0
20	0.3
30	0.5
40	0.8
50	1.2
60	3.1
70	6.2
80	9.4
90	18.2
100	106

Table 30:
despondents -
distance found from
IPP, all searches in
farmland
environment



%ile	km
10	0.2
20	0.5
30	0.5
40	1.0
50	1.5
60	3.0
70	6.5
80	12.8
90	17.0
100	150

Table 31:
despondents -
distance found
from IPP, all
searches in
moorland /upland
environment



%ile	km
10	0.0
20	0.2
30	0.5
40	0.5
50	0.8
60	1.0
70	1.0
80	1.5
90	3.1
100	68

Table 32: despondents - distance found from IPP, all searches in woodland environment

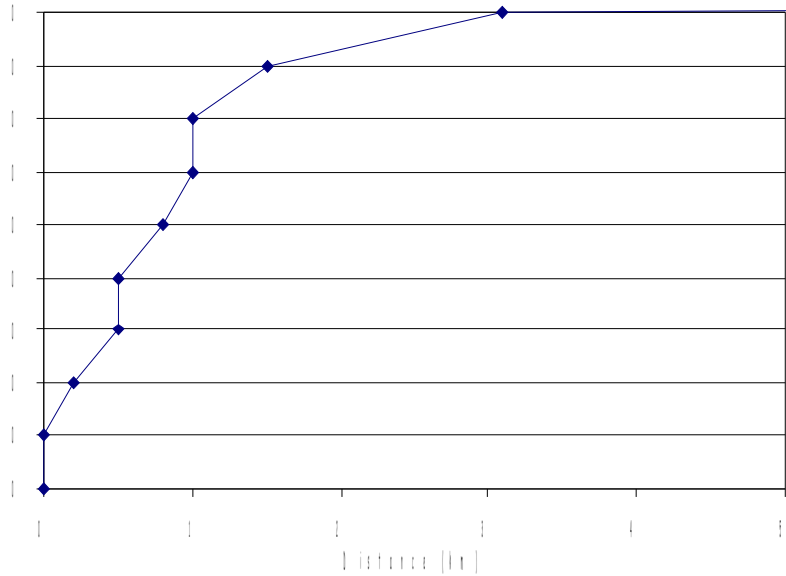


Chart 22: despondents - Distances, all in woodland environment

%ile	km
10	0.2
20	0.2
30	0.5
40	0.6
50	1.3
60	2.0
70	3.2
80	4.5
90	8.5
100	30

Table 33: despondents - distance found from IPP, all searches in other terrain environments

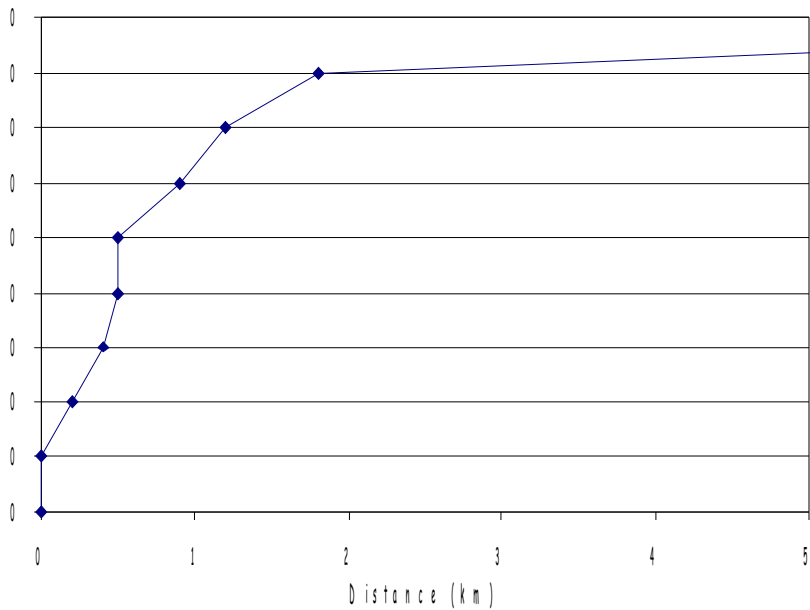


Chart 23: despondents - Distances, all in other terrain types

2. the influence of reported characteristics
- (i) there is very strong evidence to suggest that if the missing person profile indicates the possibility of suicide or self-harm and there is no mention of any of the other characteristics, in particular the abuse of drugs or alcohol, then the distance at which the person is found from the IPP is greater than might otherwise be expected; 68% of missing persons with this profile have been found at distances of at least 2 km from the IPP compared with 34% of all other despondents
 - (ii) there is strong evidence to suggest that if the missing person profile indicates the possibility of suicide or self-harm together with the abuse of drugs or alcohol, then regardless of any of the other characteristics the distance at which the person is found from the IPP is less than might otherwise be expected; 45% of missing persons with this profile have been found at distances of less than half a kilometre from the IPP compared with 24% of all other despondents
 - (iii) the fatality rates for these two groups of potential suicides and self-harmers are statistically the same
 - (iv) this issue of distance and fatality is quite complex and should be treated with caution; while there is very strong evidence to suggest that the fatalities in this category tend to be found closer to the IPP than non-fatalities (72% of despondent fatalities are found within 2 km of the IPP compared with 57% of non-fatalities), that fact is not entirely helpful since we cannot reliably identify potential fatalities; we suggest that the most important consideration should be relating the missing person profile to the comments made in (i) and (ii)

Developmental Problems

a. **Definition** - a person whose mental age is significantly below their chronological age. This might include those with severe learning difficulties, Down's syndrome or long-term damage resulting from head injuries.

b. **All searches** n = 40

	females	males	not reported	totals
urban	0	7	1	8
non-urban	1	14	1	16
totals	1	21	2	24

Table 34: developmental problems - searches by environment and gender

c. **Fatality rate** - the overall fatality rate of 8% is significantly lower than the overall fatality rate of 23%; this difference is very unlikely to have occurred by chance. Both of the fatalities reported were of males in a non-urban environment.

d. **Outcome** - condition if found: the statistics given are for all searches

	n	%
fatality	2	8
injured	0	0
unhurt	21	88
no trace	1	4

Table 35: developmental problems - outcome, all searches

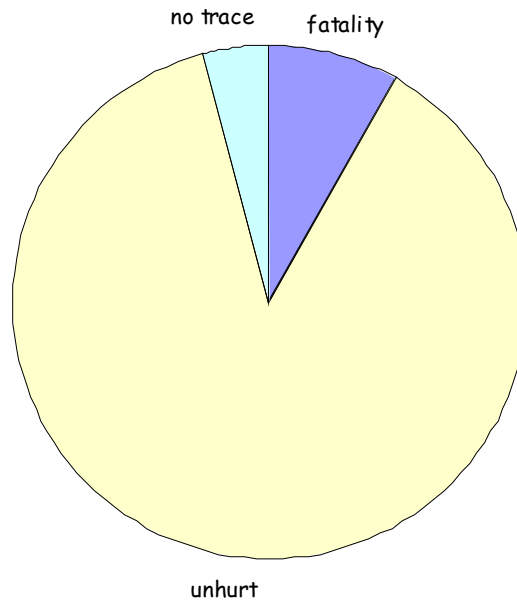


Chart 24: Developmental Problems - Outcome all

Location found - there is some indication that a higher proportion of persons who are missing in an urban environment are located in buildings or habitation compared with persons missing in a non-urban environment. The statistics shown are for all searches

	n	%
habitation	7	29
forest / woodland	6	25
building / shelter	3	13
forest edge / clearing	2	8
water / water's edge	2	8
open ground	1	4
path / track	1	4
no trace	1	4
not reported	1	4

Table 36: development problems - location found, all searches

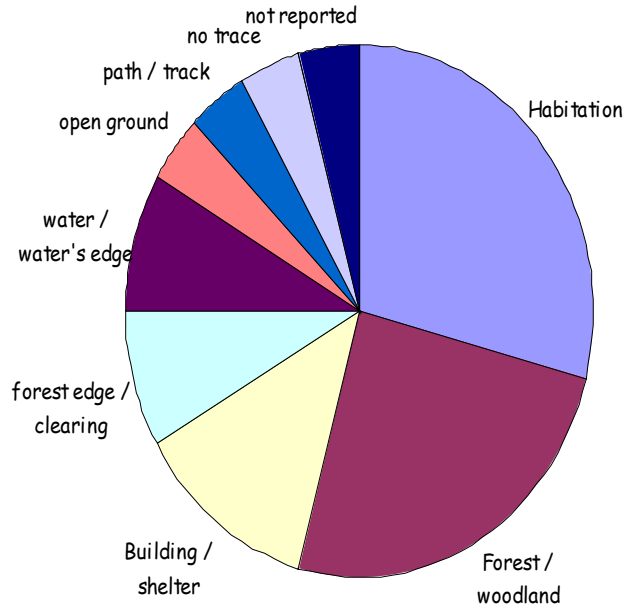


Chart 25: Development Problems - Location, all

e. **Distance found from IPP** - the statistics shown are for all searches

%ile	km
20	0.2
40	0.4
60	1.7
80	14
100	35

Table 37: developmental problems - distances found from IPP, all searches

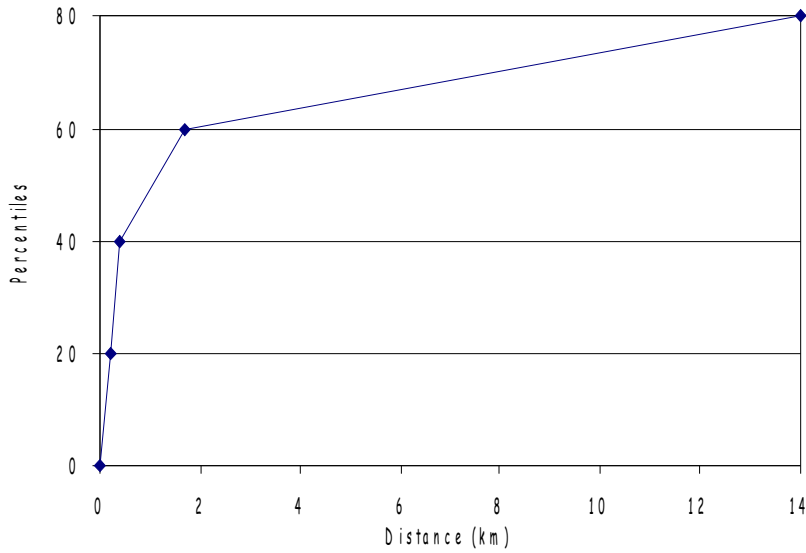


Chart 26: Developmental Problems - distance, all

Fellrunner

Caution:

Users need to be aware that this category contains insufficient data to be able to draw any firm conclusions. The information given has not been processed in any way. It is not likely to be as reliable as a basis for prediction as the information given in categories with larger volumes of data. It should be used with caution.

- a. **Definition** - either as a competitor in an event, training or recreation, including orienteering
- b. **All searches** n = 4
- c. **Fatality rate** - 1 fatality out of 4 reported incidents
- d. **Outcome** - condition if found: 1 fatality, 3 unhurt
- e. **Location found** - open ground 2, path / track 1, road 1
- f. **Distance found from IPP** - these were 1.1, 1.3, 2.0 and 5.5 km

Hikers and walkers

a. **Definition** - any form of recreational walker, of whatever length of walk, involving persons aged 17 years or more

b. All searches n = 99

	females	males	other	totals
crag / broken ground	6	18	8	32
moorland / upland	11	34	12	57
other	1	9	0	10
Total	18	61	20	99

Table 38: hiker/walker - searches by environment and gender

c. **Fatality rate** - all the reported fatalities were male; no female fatalities were reported. The fatality rate for incidents in moorland / upland terrain (5%) is significantly lower than for incidents in crag / broken ground (19%); this difference is extremely unlikely to have occurred by chance. It is worth noting that in the 10 incidents in types of terrain other than moorland / upland and crag / broken ground there were 4 fatalities reported (1 fatality in 3 reported incidents in farmland, 3 fatalities in 7 reported incidents in plantation or woodland) - no explanation is offered for these high levels of fatality.

d. **Outcome** - condition if found

	moorland / upland		crag / broken ground		other terrain types
	n	%	n	%	n
fatality	3	5	6	19	4
injured	1	2	1	3	1
unhurt	53	93	25	78	5
no trace	0	0	0	0	0

Table 39: hiker/walker - outcome, searches by terrain type

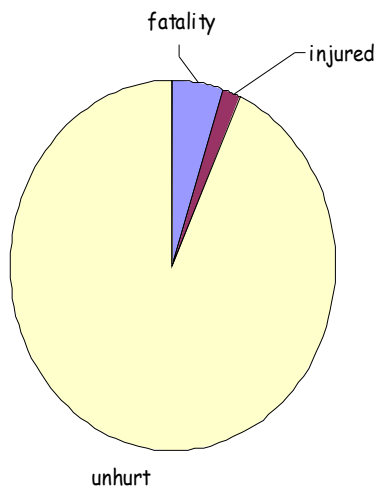


Chart 27: Hiker / Walker - Outcome, moorland / upland

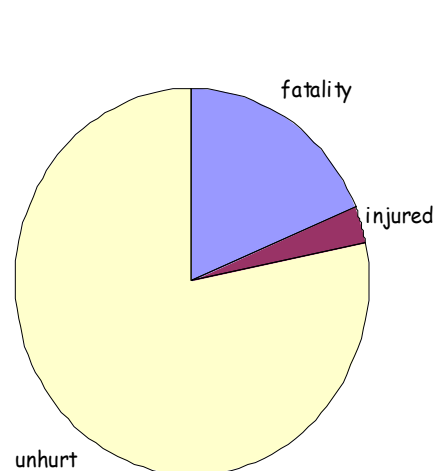


Chart 28: Hiker / Walker - Outcome, crag / broken ground

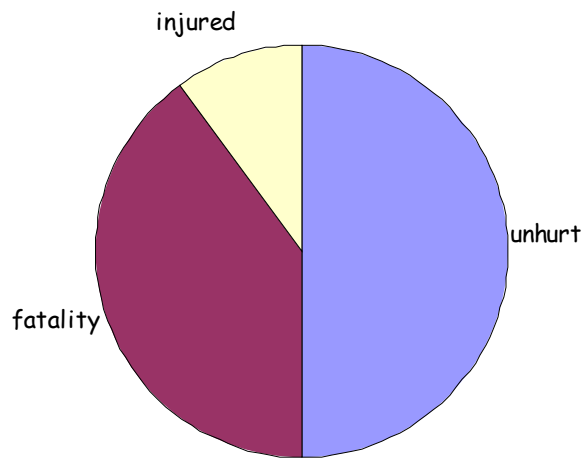


Chart 29: Hiker / Walker - outcome, other terrain types

- e. **Location found** - hikers / walkers missing in terrain type crag / broken ground are found in locations that are significantly different from those in which hikers / walkers in terrain type moorland / upland are found; this difference is highly unlikely to have occurred by chance. In addition, for searches in crag / broken ground males are found in locations that are significantly different from those in which females are found; there is no gender difference with regard to location for searches in moorland / upland

	moorland / upland		crag / broken ground		other terrain types
	n	%	male n	female n	
open ground	14	25	13	1	1
path / track	12	21	1	2	1
building / shelter	7	12	1	2	0
road	8	14	1	1	0
habitation	8	14	1	0	0
wall / fence line	4	7	1	0	1
forest / woodland	0	0	0	0	3
forest edge / clearing	1	2	0	0	2
water / water's edge	2	4	0	0	1
stream / ditch	1	2	0	0	1

Table 40: hiker/walker - location found by terrain type

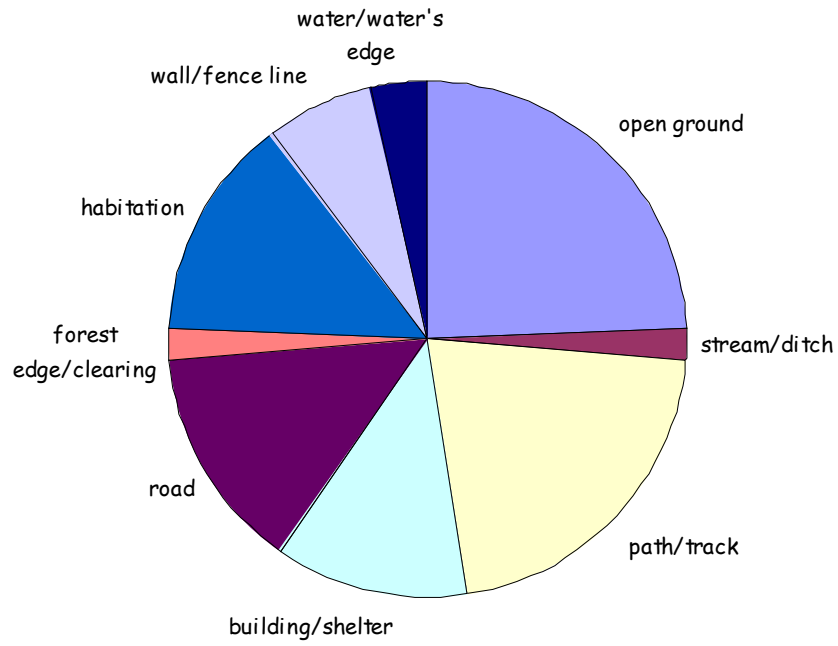


Chart 30 : Hiker/walker - Location found for moorland/upland

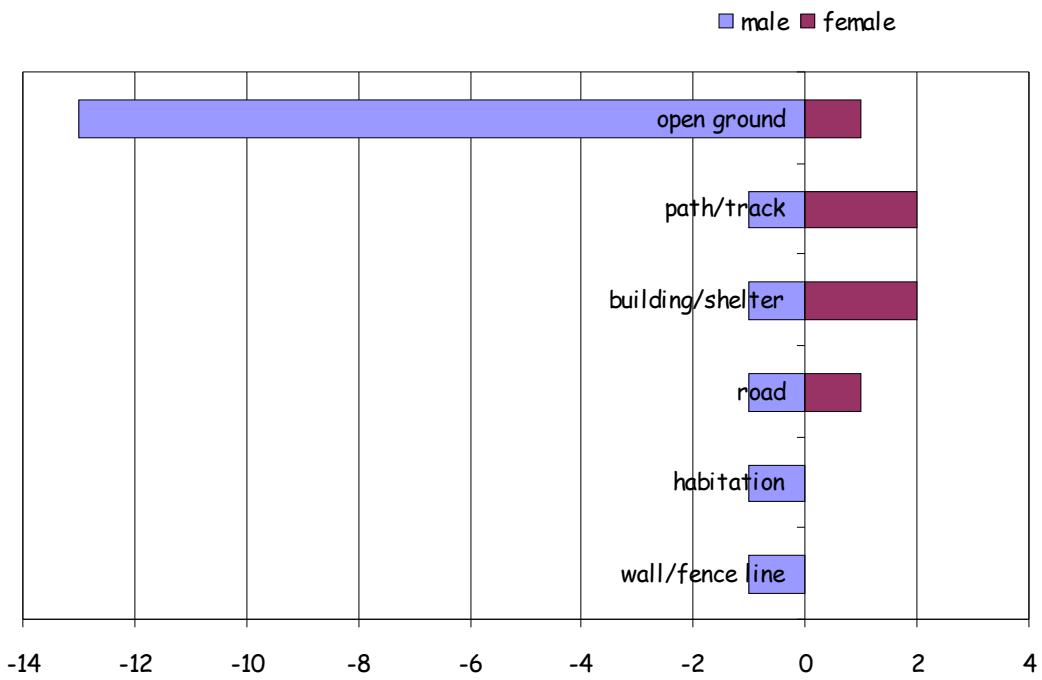


Chart 31 : Hiker/walker - Location found, crag/broken ground by gender

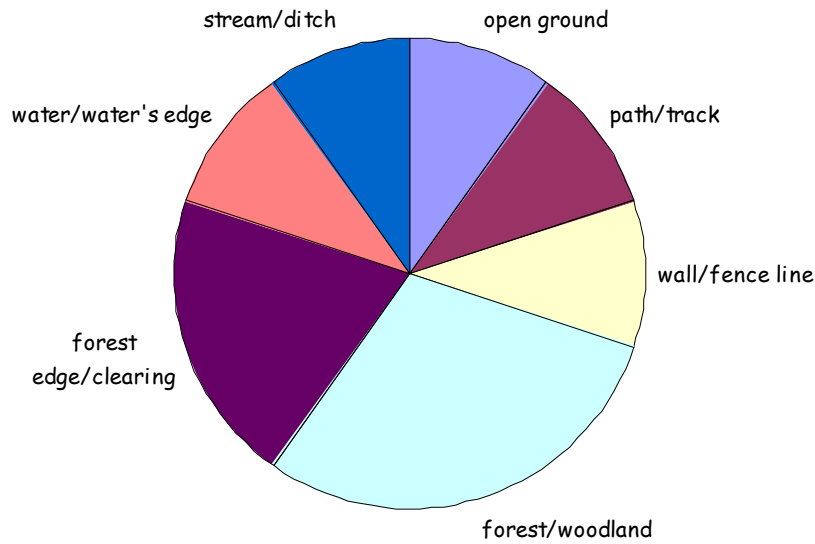


Chart 32 : Hiker/walker - Location found, other terrain types

The following additional information was provided with regard to three incidents where the location was reported as 'open ground'; "on crags", "on the expected route" and "sheltering in boulders".

- f. **Distance found from IPP** - in general, hikers / walkers are found further from IPP than other categories. They are found significantly further from IPP in moorland / upland than in crag / broken ground; the difference between these two sets of distances is extremely unlikely to have occurred by chance. In addition, for searches in moorland / upland, males were found significantly further from IPP than females; the difference between these two sets of distances is extremely unlikely to have occurred by chance. There is no discernible gender difference for searches in crag / broken ground.

crag / broken ground all searches	
%ile	km
10	0.1
20	1.0
30	1.4
40	2.0
50	2.9
60	3.6
70	4.0
80	5.6
90	6.9
100	16

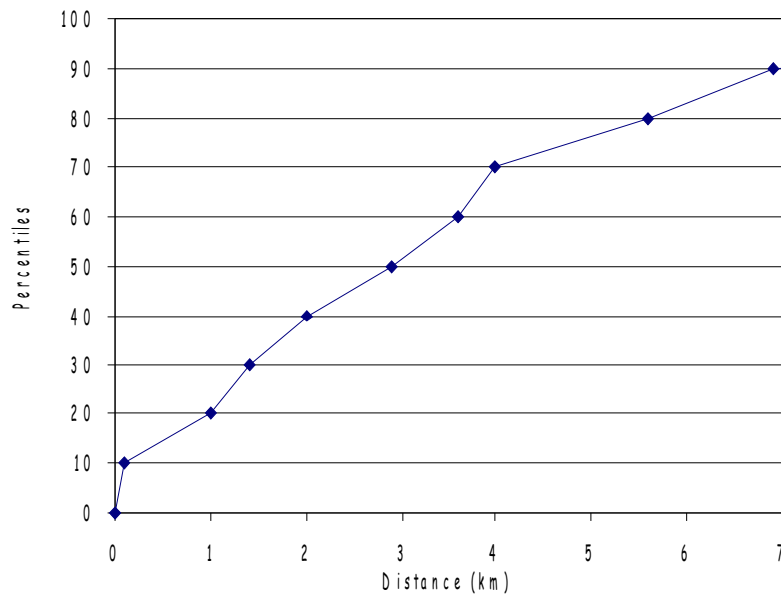


Chart 33: Hiker / Walker - distance, crag / broken ground

Table 41:
hiker/walker -
distance found from
IPP, crag/broken
ground

moorland / upland males	
%ile	km
10	0.5
20	0.8
30	1.7
40	3.0
50	4.0
60	5.4
70	6.2
80	7.5
90	11
100	15

Table 42 : hiker/walker - distance found from IPP, males in moorland/upland

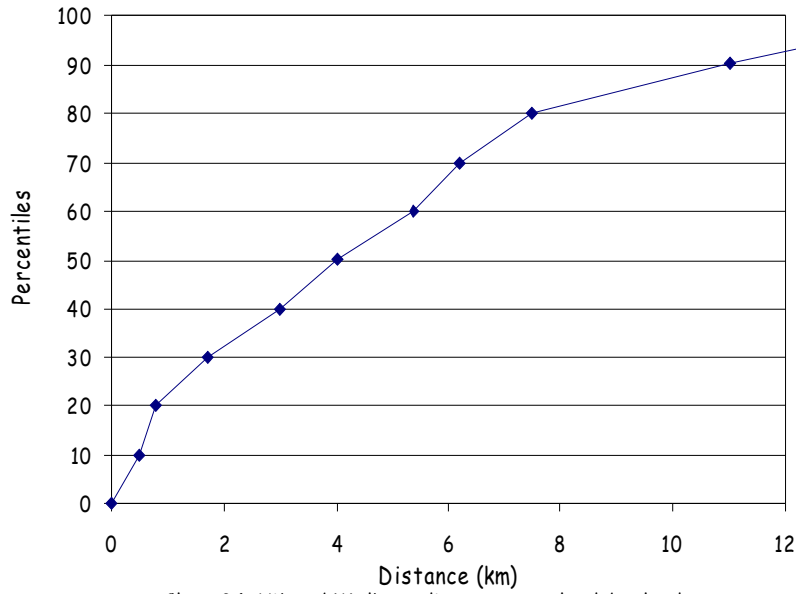


Chart 34: Hiker / Walker - distance, moorland / uplands

moorland / upland females	
%	Km
25	1.0
50	1.4
75	4.3
100	7.8

Table 43 : hiker / walker - distance found from IPP, females in moorland / upland

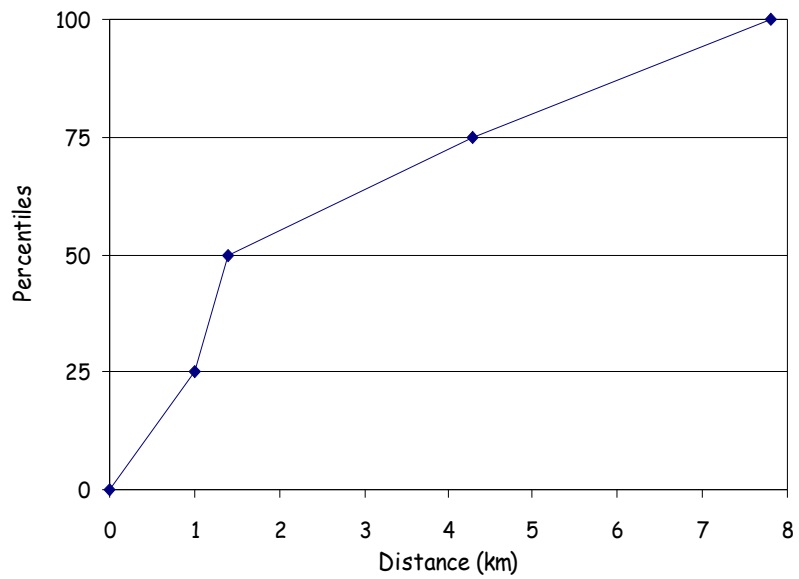


Chart 35: Hiker / Walker - distance, female in moorland / upland

other terrains	
%	km
25	0.6
50	1.0
75	2.0
100	3.0

Table 44 : hiker / walker - distance found from IPP, all searches in other terrain types

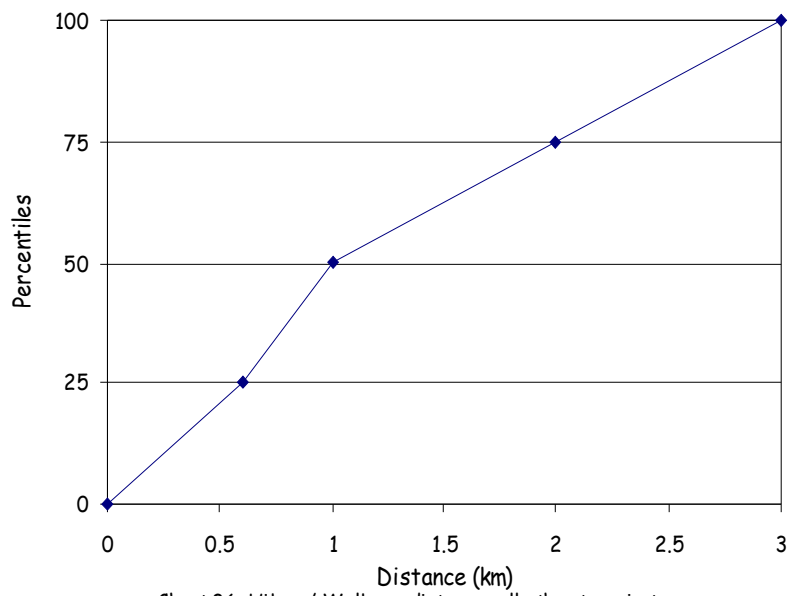


Chart 36: Hiker / Walker - distance, all other terrain types

Miscellaneous

a. **Definition** - anything not included in other categories, for example swimming, fishing, crime related incidents, missing from road traffic accidents

b. **All searches** n = 17

	females	males	not reported	totals
urban	0	2	0	2
non-urban	3	11	1	15
totals	3	13	1	17

Table 45 : miscellaneous - searches by environment and gender

c. **Fatality rate** - the fatality rate of 41% for this category is significantly higher than the overall fatality rate for all other categories (24%); this difference is very unlikely to have occurred by chance.

d. **Outcome** - condition if found: the statistics given are for all searches

	n
fatality	7
injured	1
unhurt	7
no trace	2

Table 46 : miscellaneous - outcome, all searches

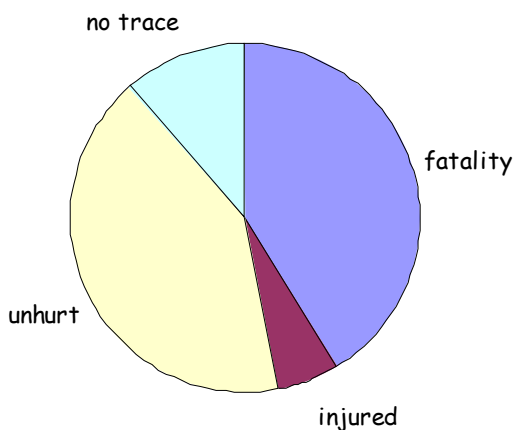


Chart 37 : Miscellaneous - Outcome

e. **Location found** - the statistics shown are for all searches

	n
open ground	4
water / water's edge	4
no trace	2
Road	2
building / shelter	1
forest / woodland	1
Habitation	1
path / track	1
stream / ditch	1

Table 47 : miscellaneous - location found, all searches

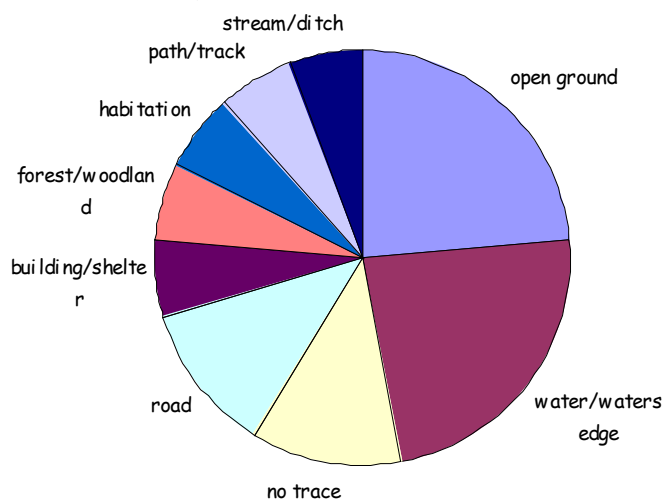


Chart 38 : Miscellaneous - Location found

The following additional information was provided with regard to two incidents where the location was reported as 'open ground'; "buried in a garden" and "stuck in a field".

f. **Distance found from IPP** - the statistics shown are for all searches

%ile	Km
25	0.3
50	1.0
75	1.9
100	10

Table 48 :
miscellaneous -
distances found from
IPP, all searches

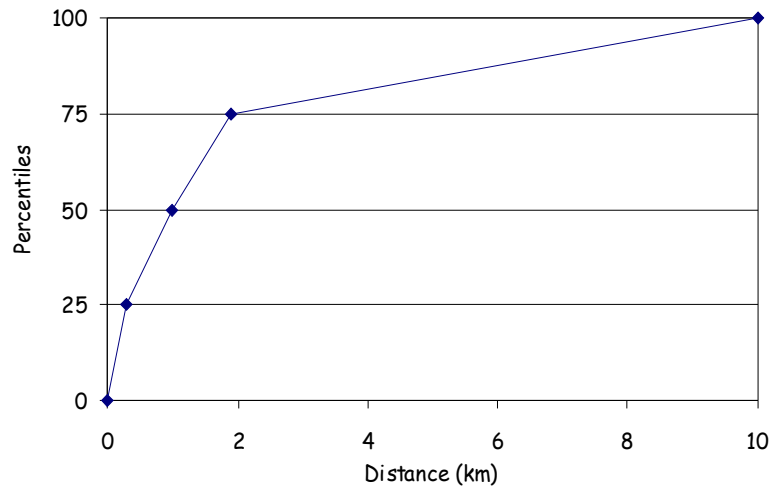


Chart 39: Miscellaneous - distances

Mountain biker

Caution:

Users need to be aware that this category contains insufficient data to be able to draw any firm conclusions. The information given has not been processed in any way. It is not likely to be as reliable as a basis for prediction as the information given in categories with larger volumes of data. It should be used with caution.

- a. **Definition** - where the bike was the main means of transport, on or off road
- b. **All searches** n = 2
- c. **Fatality rate** - 1 fatality out of 2 reported incidents
- d. **Outcome** - condition if found: 1 fatality, 1 unhurt
- e. **Location found** - both open ground
- f. **Distance found from IPP** - these were 1.0 and 24 km

Organised party

- a. **Definition** - a party with a recognised leader or purpose
- b. **All searches** n = 20

	female	male	other	total
crag / broken ground	1	1	1	3
moorland / upland	3	8	5	16
other	0	0	1	1
total	4	9	7	20

Table 49 : organised party - searches by environment and gender

- c. **Fatality rate** - no fatalities were reported for this category
- d. **Outcome** - condition if found, all searches

	n	%
fatality	0	0
injured	3	15
unhurt	17	85
no trace	0	0

Table 50 : organised party - outcomes, all searches

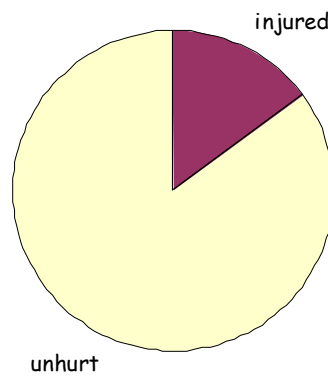


Chart 40 : Organised Party - Outcomes

- e. **Location found** - the statistics shown are for all searches

	n	%
open ground	8	40
building / shelter	3	15
path / track	3	15
forest edge / clearing	2	10
stream / ditch	2	10
forest / woodland	1	5
Road	1	5

Table 51 : organised party - location found, all searches

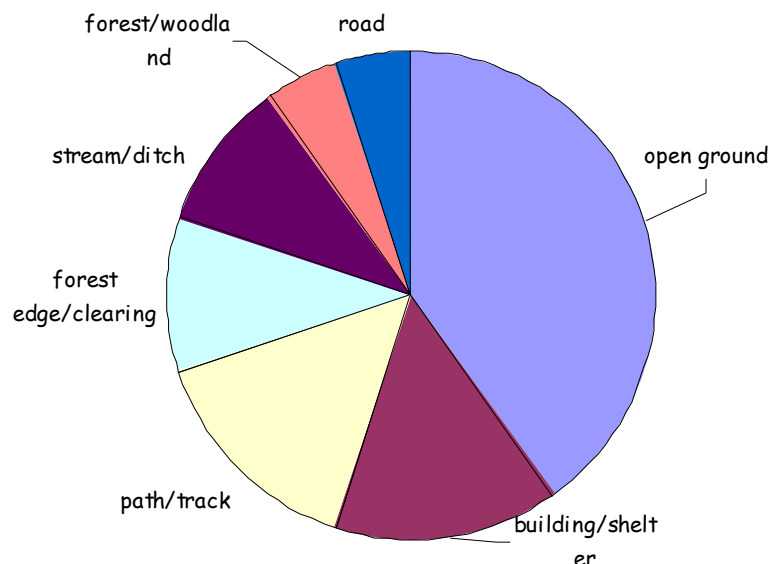


Chart 41 : Organised Party - Location found

In five of the reported incidents where the location found was given as 'open ground' additional information provided suggested that the missing persons had followed a defined route.

f **Distance found from IPP - statistics shown are for all searches**

%ile	Km
25	1.6
50	3.0
75	4.2
100	6.5

Table 52 : organised party - distance found from IPP, all searches

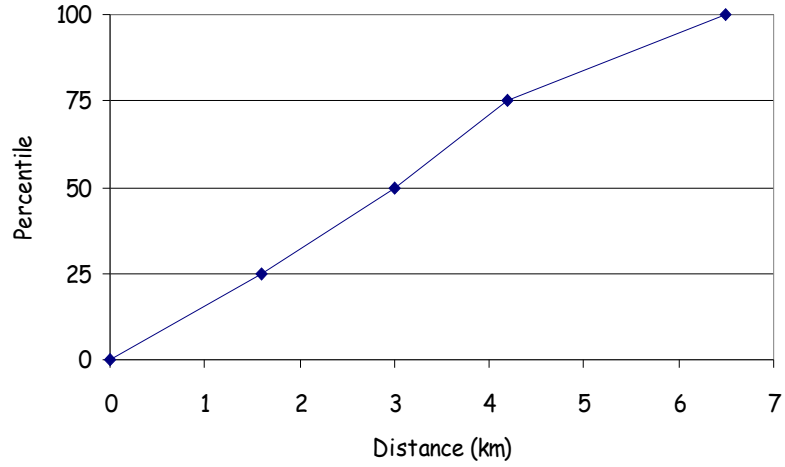


Chart 42 : Organised Party - Distances

Other vulnerable persons

a. **Definition** - any person with significant mental impairment other than those who are contained in the categories Alzheimer's sufferers, general dementia, developmental problems and psychological illness.

b. **All searches** n = 49

	females	males	other	totals
urban	6	9	4	19
non-urban	12	16	2	30
totals	18	25	6	49

Table 53 : other vulnerables - searches by environment and gender

c. **Fatality rate** - there is some indication that the fatality rate for urban incidents is lower than for non-urban incidents. There is no discernible gender difference.

d. **Outcome** - condition if found

	non-urban		urban
	n	%	n
fatality	5	17	1
injured	6	20	0
unhurt	18	60	18
no trace	1	3	0

Table 54 : other vulnerables - outcome by environment

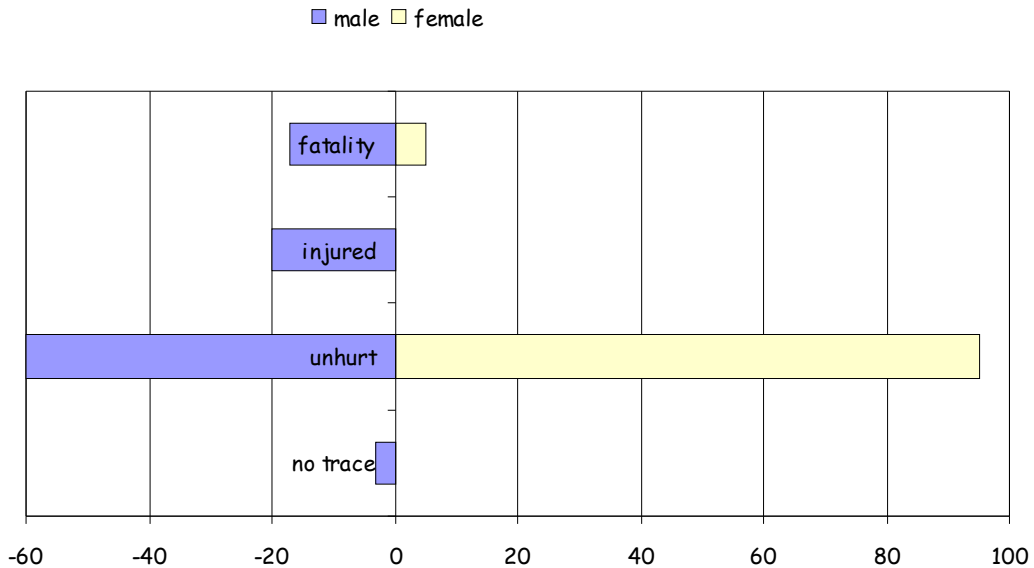


Chart 43 : Organised Party - Outcomes

- e. **Location found** - the locations at which missing persons are found in an urban environment are significantly different from the locations in which they are found in a non-urban environment; this difference is extremely unlikely to have occurred by chance. There are no discernable gender differences.

	non-urban		urban
	n	%	n
road	8	27	3
habitation	6	20	7
open ground	6	20	3
stream / ditch	3	10	0
water / water's edge	3	10	0
building / shelter	1	3	4
forest edge / clearing	1	3	1
forest / woodland	0	0	1
no trace	1	3	0
path / track	1	3	0

Table 55 : other vulnerable - location found by environment

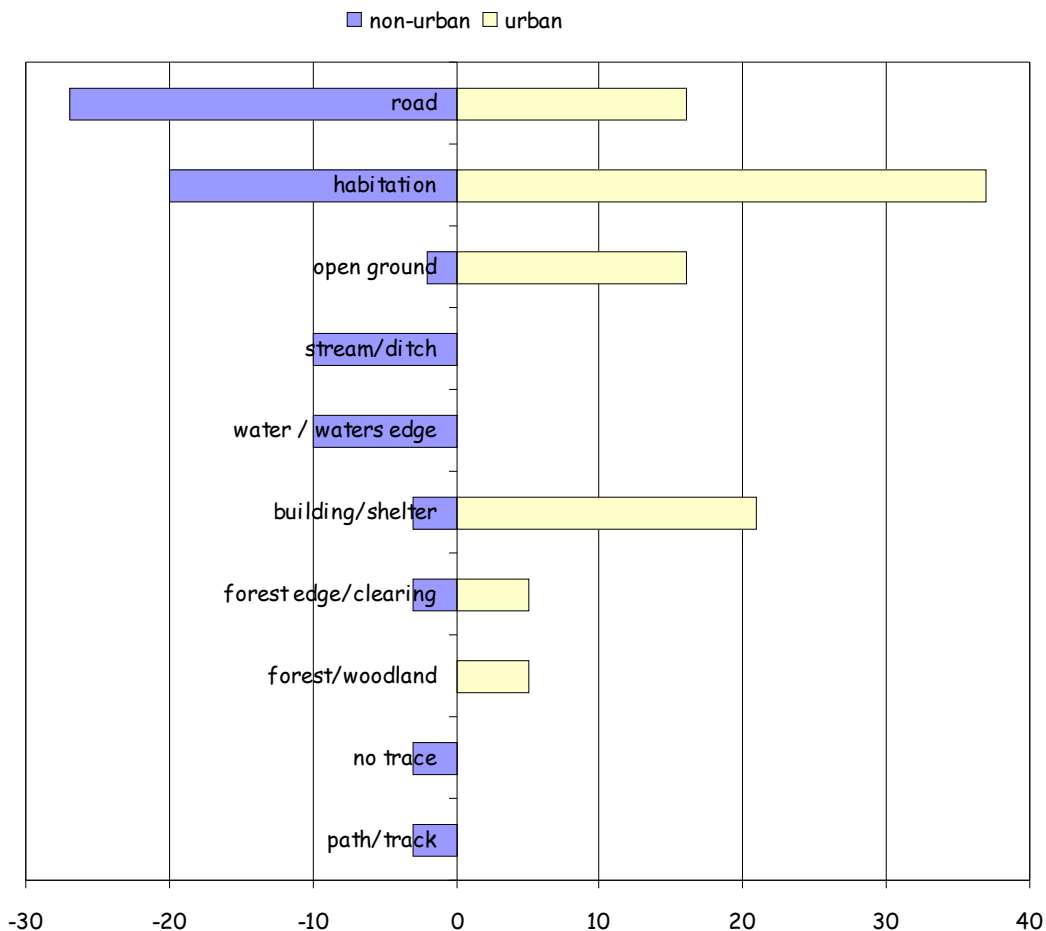


Chart 44 : Other Vulnerable - Location found (%)

No additional information was given for those incidents where the location was described as 'open ground'.

- f. **Distance found from IPP** - a higher proportion of persons in this category missing in an urban environment are found close to the IPP than in a non-urban environment; this difference is very unlikely to have occurred by chance. There is no discernible gender difference.

%ile	km
20	0.4
40	1.2
60	2.0
80	3.1
100	50

Table 56 : other vulnerables - distances found from IPP, non-urban searches

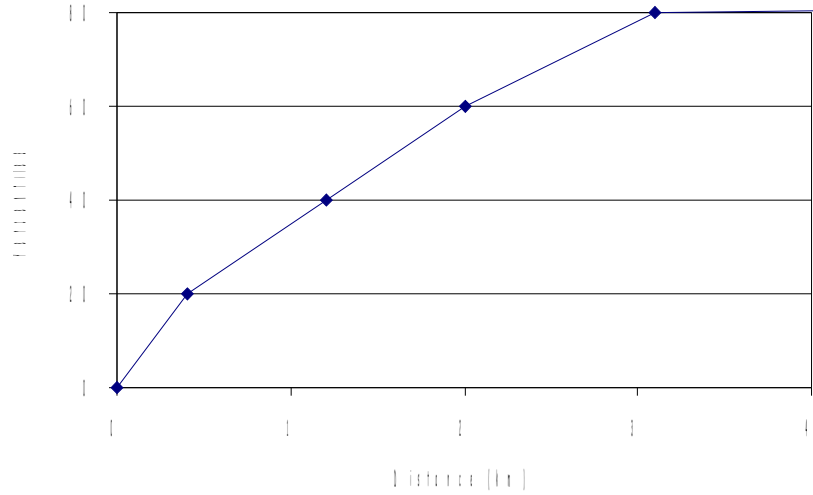


Chart 45 : Other Vulnerables - non-urban distances

%ile	Km
25	0.0
50	0.6
75	2.2
100	40

Table 57 : other vulnerables - distances found from IPP, urban searches

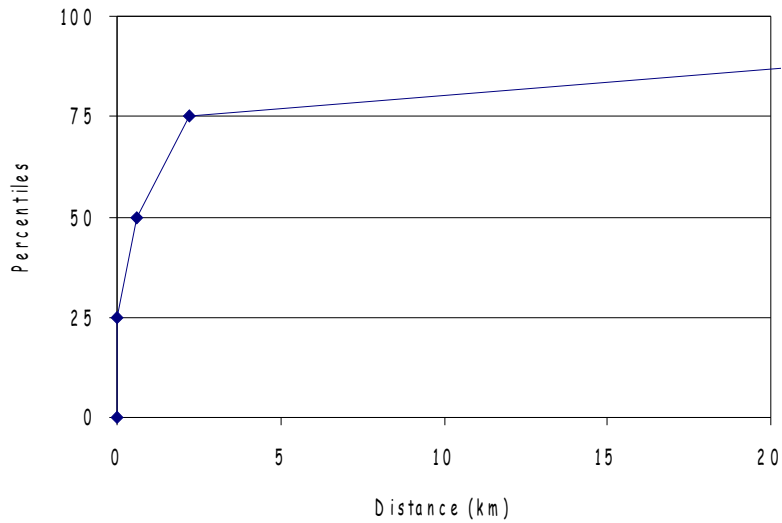


Chart 46 : Other Vulnerables - urban distances

Psychological Illness

a. **Definition** - a person diagnosed as suffering a known mental or psychological condition.

b. **All searches** n = 33

	females	males	not recorded	totals
urban	2	5	4	11
non-urban	8	11	3	22
totals	10	16	7	33

Table 58 : psychological illness - searches by environment and gender

c. **Fatality rate** - the overall fatality rate is 30%; there is no discernible gender difference or difference between urban and non-urban searches.

d. **Outcome** - condition if found: statistics given are for all searches

	n	%
fatality	10	30
injured	1	2
unhurt	18	55
no trace	4	12

Table 59 : psychological illness - outcome, all searches

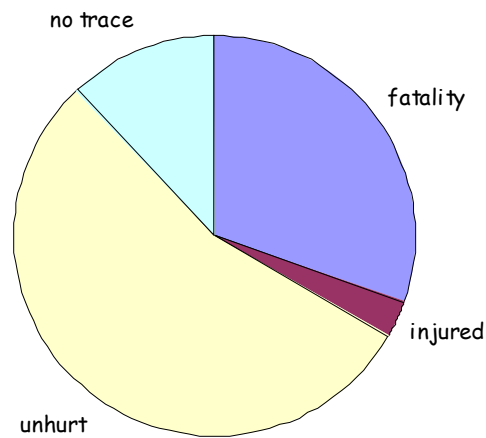


Chart 47 : Psychological Illness - Outcome

- e. **Location found** - missing persons in this category found in an urban environment are more likely to be found in a building (inhabited or otherwise) than those found in a non-urban environment; this difference is significant and is extremely unlikely to have occurred by chance. There is no discernible gender difference.

	non-urban		Urban
	n	%	n
habitation	1	5	5
road	4	18	1
no trace	4	18	0
water / water's edge	3	14	1
building / shelter	2	9	1
open ground	2	9	1
path / track	3	14	0
forest / woodland	1	5	0
forest edge / clearing	0	0	1
stream / ditch	1	5	0
wall / fence line	1	5	0
unrecorded	0	0	1

Table 60 : psychological illness - location found by environment

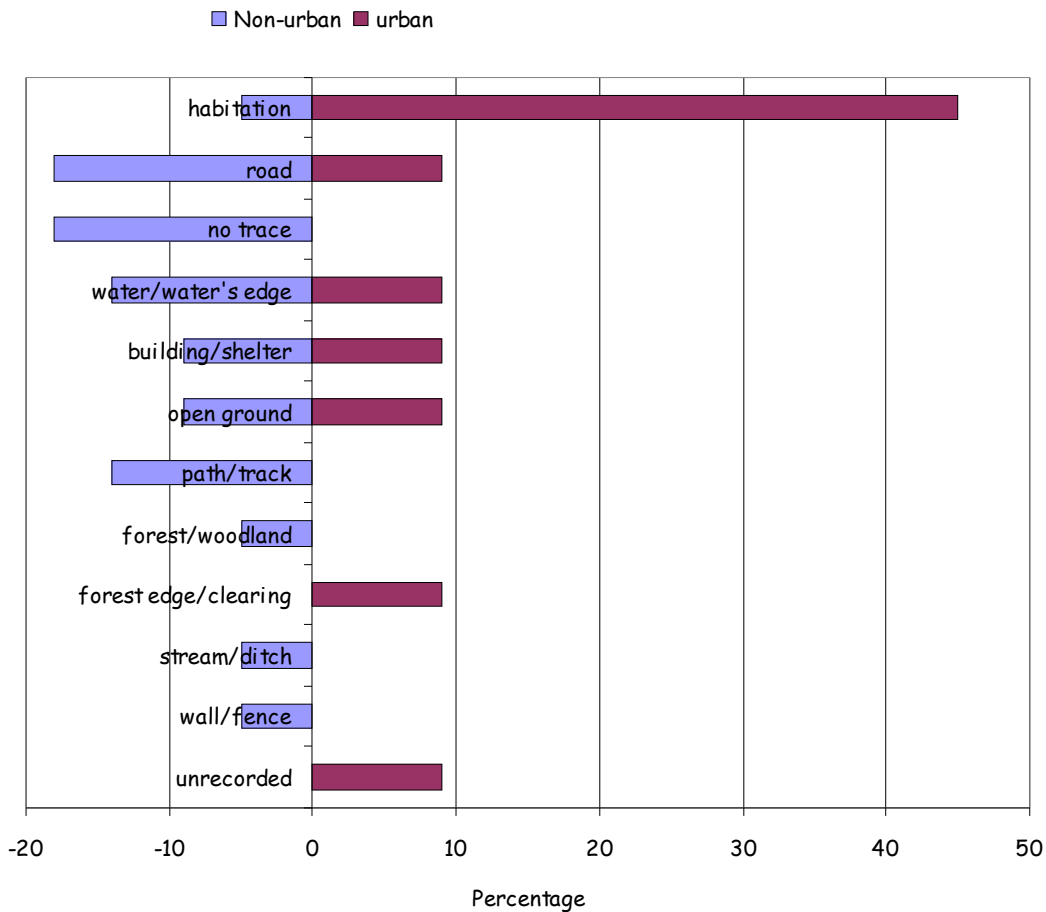


Chart 48 : Psychological Illness - Location found

The following additional information was provided with regard to one incident where the location was reported as 'open ground': "hiding in bushes".

- f. **Distance found from IPP** - a greater proportion of missing persons in this category in urban environments are found within a short distance of the IPP than in non-urban environments; this difference is unlikely to have occurred by chance.

urban %ile	km
25	0.1
50	0.3
75	8.8
100	16

Table 61 :
psychological
illness -
distances
found from
IPP, urban
searches

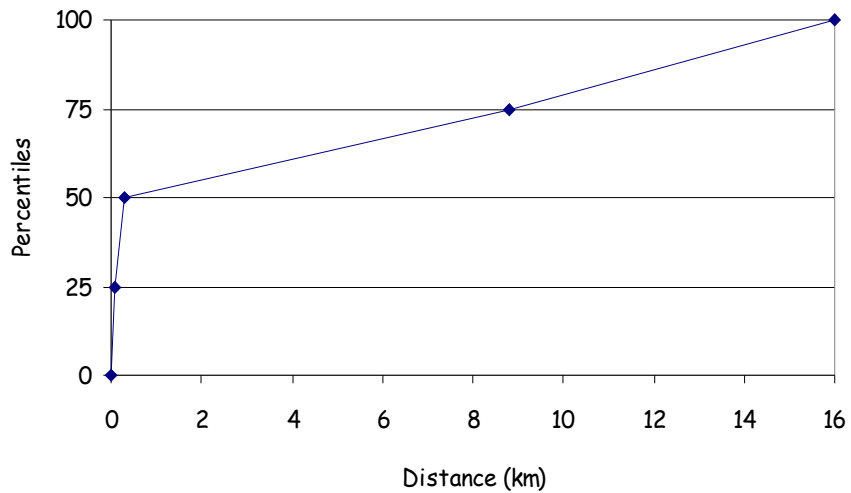


Chart 49 : Psychological Illness - urban Distances

non-urban %ile	km
25	0.8
50	1.7
75	7.8
100	12

Table 62 :
psychological
illness -
distances found
from IPP, non-
urban searches

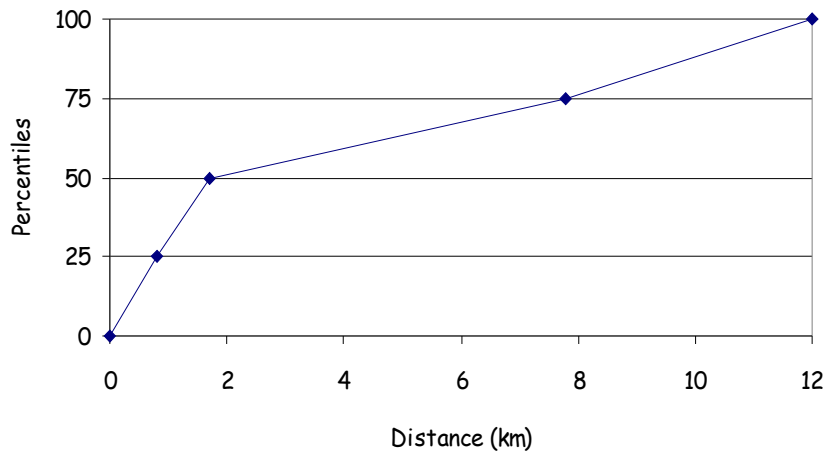


Chart 50 : Psychological Illness - non-urban Distances

Youth aged 13 to 16

- a. **Definition** - refers to chronological age only
- b. **All searches** n = 27

	Female	male	other	total
urban	1	3	1	5
non-urban	7	12	3	22
total	8	15	4	27

Table 63 : youth aged 13 to 16 - searches by environment and gender

- c. **Fatality rate** - the fatality rate of 4% is significantly lower than the overall fatality rate; this difference is highly unlikely to have occurred by chance.
- d. **Outcome** - condition if found

	n	%
fatality	1	4
injured	1	4
unhurt	25	93
no trace	0	0

Table 64 : youth aged 13 to 16 - outcome, all searches

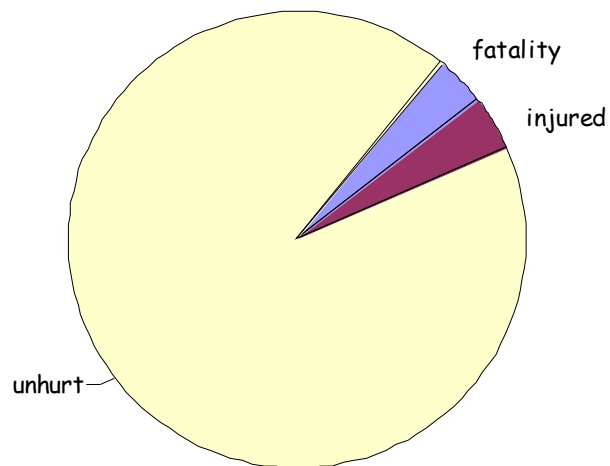


Chart 51 : Youth 13 to 16 - Outcome

- e. **Location found** - there is some indication that in an urban environment the missing person is more likely to be found in a building (inhabited or otherwise) than they are in a non-urban environment. Statistics reported are for all searches.

	n	%
habitation	7	26
building / shelter	5	19
forest / woodland	4	15
path / track	3	11
forest edge / clearing	2	7
open ground	2	7
road	2	7
stream / ditch	1	4
unrecorded	1	4

Table 65 : youth aged 13 to 16 - location found, all searches

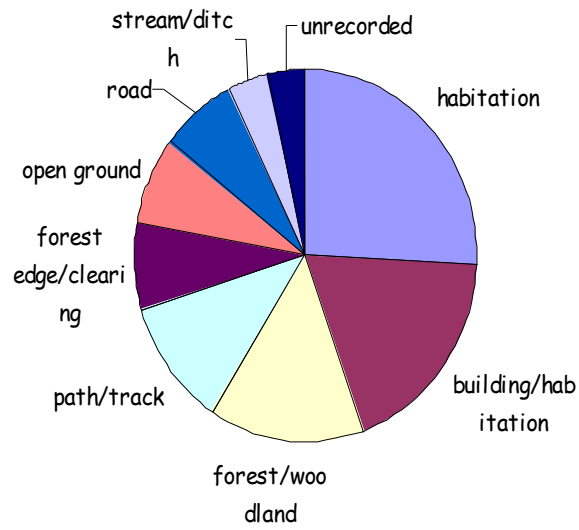


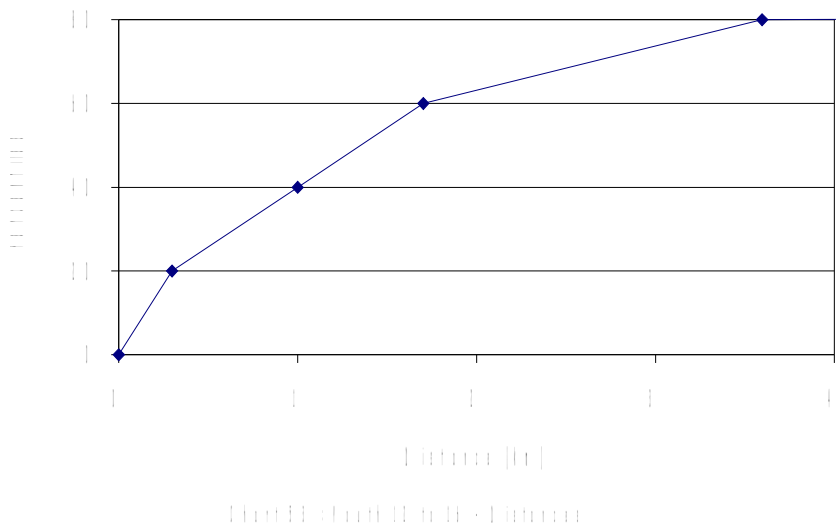
Chart 52 : Youth 13 to 16 - Location found

No additional information was provided with regard to incidents in which the location was reported as 'open ground'.

- f. **Distance found from IPP** - there is some indication that distances travelled by persons in this category in an urban environment are less than those travelled in a non-urban environment. The statistics shown are for all searches.

%ile	km
20	0.3
40	1.0
60	1.7
80	3.6
100	132

Table 66 : youth aged 12 to 16 - distances found from IPP, all searches



CONCLUDING COMMENTS

1. An overall sample size of 708 compares favourably with and in some cases exceeds Missing Person Behaviour statistics published elsewhere. But this is not a static situation; not only is the database growing all the time but its users should be getting more experienced at using the information.
2. 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.
3. The report has avoided comparing "our results" with those from other databases. That was not the point of the exercise.

Dave Perkins, Pete Roberts and Ged Feeney
August 2005

Appendix 1 Missing Person Behaviour Study - Definitions

1. Terrain Type - the area through which the major part of the journey took place

- Crag/Broken Ground - rugged upland
- Farmland - lowland arable or pasture
- Moorland/Upland - remote areas of upland or wilderness where rocky outcrops are in the minority
- Plantation (dense) - developed forest or plantation, the going may well be difficult.
- Urban - within the confines of a group of habitations, city, town or village.
- Water Margin - coastline, shoreline of large bodies of water, rivers as well as the water itself.
- Woodland (open) - parkland or wooded area where passage is relatively easy.

2. Subject Category - of the missing person(s).

- Alzheimers - a person diagnosed as suffering from dementia of Alzheimer's type
- 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.
- Dementia (general) - a person diagnosed as suffering from dementia other than dementia of Alzheimer's type
- Despondent - anyone where there is evidence that they have deliberately disappeared as a result of clinical depression or intention to harm themselves.
- Developmental problems - a person who mental age is significantly below their chronological age. This might include those with severe learning difficulties, Down's syndrome or long-term damage resulting from head injuries
- 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.
- Other Vulnerables - any person with significant mental impairment other than those who are contained in the categories Alzheimer's sufferers, general dementia, developmental problems, and psychological illness
- Psychological Illness - a person diagnosed as suffering a known mental or psychological condition
- Skier - If so equipped, including the walk in and out
- Youth (13 to 16 yr.) - refers to child's chronological age only

3. 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

4. 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

5. 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. Where the level of reporting demands it, the data for a particular sub-category has been compared with its complementary sub-category. For example, for Alzheimer's sufferers, the fatality rate for urban searches was compared with the fatality rate for non-urban searches (page 8). The question then asked was 'how likely is it that the difference between the two values 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 "the difference have occurred by chance".

significance level	likelihood that the two populations are the same	phrase to insert
$p > 0.25$	greater than 25%	could possibly
$0.10 < p < 0.25$	between 10% and 25%	are unlikely to
$0.05 < p < 0.10$	between 5% and 10%	are very unlikely to
$0.01 < p < 0.05$	between 1% and 5%	are highly unlikely to
$p < 0.01$	less than 1% chance	are extremely unlikely to

The greater the degree of 'unlikelihood' the more significant is the result.