



The U.K. Missing Person Behaviour Study

March 2011

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Abstract

The U.K. Missing Person Behaviour Study began in 2000. Its aim was to collect UK data relating to searches for missing persons, and from that data produce UK missing person behaviour statistics. The majority of the data collected so far has come from MR teams in England and Wales. Since the last report was published (2005) the volume of data available for analysis has increased by 80%.

There are a number of changes in this latest report. The main changes have been brought about by combining categories that were previously reported separately. Statistical analysis showed that there were no significant differences between the categories 'children aged 1 to 6 years', 'children aged 7 to 12 years' and 'youths aged 13 to 16 years', and so they were combined to form a single category called 'children aged 1 to 16 years'. Likewise, no significant differences were found between the categories 'Alzheimer's sufferers' and 'dementia (general)', and they were therefore combined to form a single category called 'dementia'.

The report includes for the first time possible scenarios for each category. These are based on the most likely outcomes of the statistics, and are offered as suggestions only. Search Managers should not rule out other scenarios that fit in with the available facts.

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Document History

Interim Report - November 2001
Full Report - September 2002
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Full Report - August 2005
Full Report – March 2011

These documents can be downloaded from
<http://www.mountain.rescue.org.uk/publications/search-management> and
<http://www.searchresearch.org.uk/www/ukmpbs/>

“Not all those who wander are lost.” *JRR Tolkien*

“Tis a truth well known to most,
That whatsoever thing is lost;
We seek it, ere it come to light,
In every cranny but the right.” *William Cowper, 1731 - 1800*

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THE UK MISSING PERSON BEHAVIOUR STUDY

March 2011

BACKGROUND

As part of their incident reporting procedure, MR teams in England and Wales are able to submit additional information about any searching that took place. This facility has been in operation since 2000, and, together with a small number of incident reports from other UK sources, provides the data for the UK Missing Person Behaviour Study. Prior to 2000, all of the information available to UK search managers came from North America and Canada.

After more than 10 years, the U.K. Missing Person Behaviour Study is now sufficiently well established for its results to stand on their own merit.

THE 2011 ANALYSIS

Some changes have been made to the way that the results are presented in this report:

1. Changes to categories:

- a. The categories 'children aged 1 to 6 years', 'children aged 7 to 12 years' and 'youths aged 13 to 16 years' have been merged into one category called 'children aged 1 to 16 years'. While we are not suggesting that there are no differences between children across this age range, analysis had shown that there were no significant differences between the three original categories in terms of the statistics reported in this document. The increase in the volume of data brought about by merging the data to create a single category brings with it an increase in the level of confidence in the results.
- b. Similarly, the categories 'Alzheimer's sufferers' and 'dementia (general)' have been merged into one category called 'dementia'. There were no significant differences between the two original categories in terms of the statistics reported in this document. The new category removes any uncertainty as to what type of dementia the missing person is suffering from.
- c. The category 'hikers and walkers' has been renamed 'walkers'.
- d. The narrative text fields of all records that had been submitted under the category 'miscellaneous' were examined to see if there were any common elements. As a result, two new categories (health related and water related) were created using records originally classed as 'miscellaneous'.
- e. Similarly, a new category 'substance related' was created using records that had been submitted mostly under the category 'despondent'. These last two points underline the value of the entries made in the text fields.

2. Likely scenarios: a number of possible scenarios are given at the end of each category report. These are based only on the information contained

within the statistics for the category, and are offered as suggestions or exemplars. In reality, the search manager should not exclude any scenarios that fit in with facts known about the missing person and the incident. In some areas there may be considerable local knowledge derived from previous incidents which will be an important component of scenario construction.

SIGNIFICANT DIFFERENCES

Our aim has been to produce a report in which the statistics are in a form such that they can be matched as closely as possible to the missing person for whom the user is currently searching.

There are two reasons why this does not always happen:

- a. there may not be sufficient data to support these statistics with any degree of certainty, and therefore they are not shown
- b. there might not be any difference between, for example, the statistics for male children and female children found by searches in farmland, in which case they will be reported together; nothing is to be gained by reporting them separately ... in fact, the confidence that we can attach to the results would be reduced because the numbers involved would be smaller

One of the basic steps in the analysis procedure therefore is to look for differences in the behaviour of groups within each category, for example were children missing in urban areas found in locations that were very different to those in which children missing in farmland were found, or was the distance from the IPP (Initial Planning Point: either a last known point LKP or point last seen PLS) at which children were found dependent on either terrain or gender?

Highlighting these differences in the report enables the search manager to match more closely the profile of the missing person and the statistics.

Reporting these differences is done at the 95% confidence level throughout. This means that, for example, where we have said that the outcome (condition when found) for male walkers was significantly different to that of female walkers then there is only 5% likelihood or less that the gender difference found in the study was due to chance. In other words, there is 95% likelihood that there is some fundamental difference between the two.

REPORTING THE RESULTS

The more data that we have for a particular category then the greater is the level of confidence that we will have in any derived statistics. For example, with the data available for this report, there is a greater level of confidence in the statistics for missing walkers (201 reported incidents) than there is for substance abusers (33 reported incidents).

By extension, we feel that the level of reporting in this document should reflect the number of incidents available for analysis. Categories with a large number of reported incidents can stand a more detailed analysis than categories with fewer reported incidents.

The report gives four basic statistics for each category of missing person. These are:

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

The way that these are dealt with in the report depends on the number of incidents that have been reported for each category (e.g. walkers) or distinct sub-category (e.g. female walkers, or female walkers in moorland):

Categories with 50 or more reported incidents:

- fatality rate is reported as a percentage of all incidents in the category
- outcome is reported as numbers and percentages
- location is reported as numbers and percentages
- distance found from the IPP is reported in increments of 10% to two significant figures

Categories with 20 or more but less than 50 reported incidents:

- fatality rate is reported as a percentage of all incidents in the category
- outcome is reported as numbers and percentages
- location is reported as numbers and percentages
- distance found from the IPP is reported in increments of 20% to two significant figures

Categories with 10 or more but less than 20 reported incidents:

- fatality rate is reported as a number
- outcome is reported as numbers
- location is reported as numbers
- distance found from the IPP is reported in increments of 25% to two significant figures

Categories with less than 10 reported incidents: no analysis has been done and the original data is reported. It is important that users realise that it is unwise to try to draw firm conclusions from this data. It is presented for guidance only and should be used with great care. No scenarios are suggested for these categories.

OVERALL STATISTICS

Overall statistics that may be of interest are as follows:

Table 1: numbers of reported incidents, by year of report

| 2011 report category | 2011 ^a | 2005 ^a | 2004 ^a |
|------------------------------------|-------------------|-------------------|-------------------|
| children aged 1 to 16 ^b | 113 | 76 | 60 |
| climber | 3 | 2 | 2 |
| dementia ^c | 194 | 99 | |
| despondent | 457 | 283 | 198 |
| development problems | 37 | 24 | |
| fell runner | 7 | 4 | 3 |
| health related ^d | 8 | | |
| miscellaneous | 29 | 17 | 30 |
| mountain biker | 6 | 2 | 2 |
| organised party | 26 | 20 | 14 |
| other vulnerables ^e | 83 | 49 | 168 |
| psychological illness | 63 | 33 | |
| substance related ^f | 33 | | |
| walker ^g | 201 | 99 | 77 |
| water related ^d | 11 | | |
| total reported incidents | 1271 | 708 | 554 |

Notes:

- cut-off dates for table 1 were September 2010, February 2005 and November 2003
- in previous reports children were shown in three separate age categories; the values for 2005 and 2004 under 'children aged 1 to 16 years' are the totals of those category values
- in the 2005 report, Alzheimer's sufferers and other types of dementia were shown as separate categories
- included in the category 'miscellaneous' in previous reports
- in the 2004 report, this included missing persons suffering from any form of dementia
- included in the category 'despondent' in previous reports
- in previous reports this category was called 'hikers and walkers'

Table 2: subjects by gender, all searches, by year

| gender | 2011 | | 2005 | | 2004 | |
|-----------------------|------|----|------|----|------|----|
| | n | % | n | % | n | % |
| male | 820 | 65 | 434 | 61 | 330 | 60 |
| female | 341 | 27 | 181 | 26 | 143 | 26 |
| other or not reported | 77 | 6 | 77 | 11 | 70 | 13 |
| mixed group | 33 | 3 | 16 | 2 | 11 | 2 |

Table 3: subjects by condition when located, all searches, by year

| condition | 2011 | | 2005 | | 2004 | |
|-----------|------|----|------|----|------|----|
| | n | % | n | % | n | % |
| unhurt | 801 | 63 | 444 | 63 | 347 | 63 |
| fatality | 267 | 21 | 163 | 23 | 125 | 23 |
| injured | 131 | 10 | 64 | 9 | 50 | 9 |
| no trace | 72 | 6 | 37 | 5 | 32 | 6 |

Table 4: percentage subject by condition when located, by gender, all searches, by year

| condition | 2011 | | 2005 | |
|-----------|--------|----------|--------|----------|
| | male % | female % | male % | female % |
| unhurt | 60 | 67 | 60 | 66 |
| fatality | 23 | 17 | 25 | 18 |
| injured | 10 | 13 | 9 | 12 |
| no trace | 7 | 4 | 6 | 4 |

MISSING PERSONS, LOST OPPORTUNITIES

The 1271 missing person searches for which we currently hold data is 1271 more than we had when we started in September 2000. During that time, however, MRTs in England and Wales have reported elsewhere that they have taken part in 5141 missing person searches ... so what happened to the data from the other 3870? While having data on 1271 missing person searches available for analysis is pretty good, having data for 5141 would have been most impressive. Our view is that the data that never reached us represents not only 3870 missing persons but also 3870 lost opportunities. At the current rate of progress it will be somewhere around the year 2040 before we are likely to have that amount of data available for analysis.

AND FINALLY

Despite our comments in the previous paragraph, we are acutely aware that without the efforts of all those who send in incident reports with missing person data attached there would be no U.K. Missing Person Behaviour Study. We are grateful for all your contributions.

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

Children aged 1 to 16 years

- a. **Category definition:** children whose chronological age is in the range 1 to 16 years and who have had a history of normal development. If the child's history of development has not been normal then another category might be more appropriate, for example Developmental Problems or Psychological Illness.

The category was formed by merging the data collected for children aged 1 to 6, children aged 7 to 12 and youths aged 13 to 16. It had been shown that there was no statistically significant difference between the data for these three age groups with regard to condition when found, the location in which they were found and how far they had travelled from the IPP. There was nothing to be gained therefore by reporting them as three separate categories; in fact, merging them into one brings with it a greater degree of confidence in the results due to the increased volume of data.

Note: we are *not* saying that children of all age groups behave in a similar manner. Children's skills and abilities, and thus their likely behaviours when lost, will change with age. They will follow developmental stages – physical, social, emotional and intellectual, which are well detailed by psychologists. It is important to investigate levels of development through a detailed subject profile. Particularly relevant in the context of 'missing' is their level of spatial awareness and understanding of the concept of 'lost'. For a youngster below 3 years of age these are most likely to be non-existent and will not become fully developed until about 8 or 9 years. Their developing abilities and understanding of situations leading up to 9, viewed on a sliding scale of development are not the same for all children of a similar age, can both help and make matters worse when 'missing'. We recommend that you read Gibb and Woolnough¹, which offers a description of how the behaviour of children might change as their age changes.

b. All searches: n = 113

Table 5: Children aged 1 to 16 years, by terrain and gender, all searches

| | female | male | other* | total |
|----------------------|--------|------|--------|-------|
| urban | 17 | 25 | 3 | 45 |
| farmland | 5 | 18 | 2 | 25 |
| moorland | 4 | 8 | 4 | 16 |
| plantation | 4 | 4 | 0 | 8 |
| water margin | 1 | 6 | 0 | 7 |
| woodland | 3 | 4 | 0 | 7 |
| crag / broken ground | 1 | 3 | 1 | 5 |
| | 35 | 68 | 10 | 113 |

* 'other' means that the gender was not reported

c. Fatality rate: the fatality rate for children was 3%, which is significantly lower than the fatality rate for the other categories in the study.

d. Outcome - condition if found: children were significantly different from the other categories in the study in all respects. More children were found unhurt, and fewer were either found injured or not found at all. There was no discernible gender difference or difference between different types of terrain.

Table 6: Children aged 1 to 16 years, outcome, all searches

| | all searches | |
|----------|--------------|----|
| | n | % |
| fatal | 3 | 3 |
| injured | 1 | 1 |
| unhurt | 109 | 96 |
| no trace | 0 | 0 |

- e. Location found:** there was no discernible gender difference. There were, however, significant differences between terrain types relating in particular to the likelihood of the missing child being found in a building.

Table 7: Children aged 1 to 16 years, location found by terrain type

| | urban | | farmland | | others | |
|----------------|-------|----|----------|----|--------|----|
| | n | % | n | % | n | % |
| building | 32 | 71 | 13 | 52 | 14 | 33 |
| travel aid | 5 | 11 | 2 | 8 | 14 | 33 |
| trees | 1 | 2 | 5 | 20 | 5 | 12 |
| open ground | 4 | 9 | 2 | 8 | 5 | 12 |
| water | 0 | 0 | 1 | 4 | 3 | 7 |
| linear feature | 2 | 4 | 2 | 8 | 1 | 2 |
| not recorded | 1 | 2 | 0 | 0 | 1 | 2 |

Table 8: Children aged 1 to 16 years, location found by terrain type, detail

| | urban | | farmland | | others | |
|------------------------|-------|----|----------|----|--------|----|
| | n | % | n | % | n | % |
| building | | | | | | |
| building / shelter | 9 | 20 | 6 | 24 | 6 | 14 |
| habitation | 23 | 51 | 7 | 28 | 8 | 19 |
| travel aid | | | | | | |
| path / track | 1 | 2 | 0 | 0 | 5 | 12 |
| road | 4 | 9 | 2 | 8 | 9 | 21 |
| trees | | | | | | |
| forest / woodland | 1 | 2 | 3 | 12 | 5 | 12 |
| forest edge / clearing | 0 | 0 | 2 | 8 | 0 | 0 |
| linear feature | | | | | | |
| stream / ditch | 0 | 0 | 2 | 8 | 0 | 0 |
| wall / fence line | 2 | 4 | 0 | 0 | 1 | 2 |

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

- f. **Distance found from IPP:** there was no significant difference between the distances travelled by children and all the other categories. However, there was a significant difference between the distances travelled by children missing in terrain described as farmland compared with children missing in all the other types of terrain. There was no discernible gender difference.

Table 9: Children aged 1 to 16 years, distance found from IPP, by terrain type

| farmland | | others | |
|------------|------|------------|------|
| percentile | km | percentile | km |
| 20 | 0.10 | 10 | 0.00 |
| 40 | 0.50 | 20 | 0.50 |
| 60 | 0.70 | 30 | 0.58 |
| 80 | 2.0 | 40 | 1.0 |
| 100 | 5.0 | 50 | 1.1 |
| | | 60 | 2.0 |
| | | 70 | 2.2 |
| | | 80 | 5.0 |
| | | 90 | 9.2 |
| | | 100 | 130 |

- g. **Possible scenarios:** based on the information given above for this category, some of the following comments will probably occur in the most likely scenarios for missing children. In practice, the search manager should not rule out other plausible scenarios.

- the missing child is likely to be found alive (96% of incidents)
- in an urban environment, a missing child is likely to be found in a building (71%), the majority of which (51%) are classed as habitation
- a child missing in farmland is likely to be found in a building (52%), which is almost equally likely to be classed as habitation or building / shelter, or in trees (20%)
- in environments other than urban or farmland the missing child is equally likely (33% of incidents each) to be found in a building (habitation and building / shelter equally likely) or on a travel aid (almost twice as likely to be on a road as on a path or track)
- a child missing in farmland is likely to be found closer to the IPP than a child missing in other environments; in farmland, 50% are found within 0.5 km of the IPP, whereas in other environments 50% are found within 1.1 km of the IPP.

Climber

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 planning as the information given in categories with larger volumes of data. It should be used with caution.

- a. Category definition:** on or off route, accessing into or out of the climb
- b. All searches:** n = 3
- c. Fatality rate:** the fatality rate for this category was 2 fatalities out of 3 reported incidents.
- d. Outcome - condition if found:** 2 fatalities, 1 unhurt
- e. Location found:** open ground 2, habitation 1
- f. Distance found from IPP:** these were 0.8 km, 2 km and 27 km

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Dementia

a. **Category definition:** this category contains all missing persons with some form of dementia, including those suffering from Alzheimer's Disease. Gibb and Woolnough² provides a useful discussion on different forms of dementia.

b. **All searches:** n = 194

Table 10: Dementia, by terrain and gender, all searches

| | female | male | other* | total |
|----------------------|--------|------|--------|-------|
| urban | 29 | 62 | 8 | 99 |
| farmland | 21 | 41 | 3 | 65 |
| woodland | 4 | 6 | 1 | 11 |
| moorland | 0 | 8 | 0 | 8 |
| water margin | 3 | 3 | 0 | 6 |
| plantation | 1 | 2 | 0 | 3 |
| crag / broken ground | 1 | 1 | 0 | 2 |
| | 59 | 123 | 12 | 194 |

* 'other' means that the gender was not reported

c. **Fatality rate:** the fatality rate for this category was 18%. This is not significantly different to the overall fatality rate for all the other categories in the study. There was no discernible gender difference or difference between the fatality rates for different types of terrain.

d. **Outcome – condition if found:** significantly more dementia sufferers were found injured than was the case for all other categories. There was no discernible gender difference or difference between the outcome for different types of terrain.

Table 11: Dementia, outcome, all searches

| | all searches | |
|----------|--------------|----|
| | n | % |
| fatal | 34 | 18 |
| injured | 31 | 16 |
| no trace | 6 | 3 |
| unhurt | 123 | 63 |

- e. Location found:** there was a significant difference between the locations in which persons missing in farmland and urban areas were found, and in addition there was a significant gender difference for persons missing in farmland.

Table 12: Dementia, location found by terrain and gender

| | farmland female | | farmland male | | urban | | others | |
|----------------|--------------------|----|------------------|----|-------|----|--------|----|
| | n | % | n | % | n | % | n | % |
| travel aid | 8 | 42 | 12 | 29 | 35 | 36 | 1 | 4 |
| building | 5 | 26 | 8 | 20 | 29 | 30 | 2 | 7 |
| linear feature | 2 | 11 | 12 | 29 | 17 | 17 | 5 | 21 |
| open ground | 1 | 5 | 7 | 17 | 11 | 11 | 8 | 29 |
| trees | 3 | 16 | 1 | 2 | 1 | 1 | 7 | 21 |
| water | 0 | 0 | 1 | 2 | 4 | 4 | 5 | 18 |
| not recorded | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

Table 13: Dementia, location found by terrain and gender, detail

| | farmland female | | farmland male | | urban | | others | |
|------------------------|--------------------|----|------------------|----|-------|----|--------|----|
| | n | % | n | % | n | % | n | % |
| travel aid | | | | | | | | |
| path / track | 2 | 11 | 6 | 15 | 7 | 7 | 1 | 4 |
| road | 6 | 32 | 6 | 15 | 28 | 29 | 0 | 0 |
| building | | | | | | | | |
| building / shelter | 1 | 5 | 3 | 7 | 8 | 8 | 1 | 4 |
| habitation | 4 | 21 | 5 | 12 | 21 | 21 | 1 | 4 |
| linear feature | | | | | | | | |
| stream / ditch | 1 | 5 | 6 | 15 | 7 | 7 | 3 | 11 |
| wall / fence line | 1 | 5 | 6 | 15 | 10 | 10 | 2 | 7 |
| trees | | | | | | | | |
| forest / woodland | 2 | 11 | 1 | 2 | 1 | 1 | 5 | 18 |
| forest edge / clearing | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 7 |

The following additional information was provided with regard to five incidents for which the location was reported as 'open ground': hit a natural barrier and sat down, stuck in dense undergrowth, asleep on a park bench, found in thick bushes and found in a patch of overgrown nettles and grass.

- f. **Distance found from IPP:** there was no significant difference between the distances travelled by dementia sufferers and all the other categories in the study; there was, however, a significant difference between dementia sufferers missing in farmland and urban environments.

Table 14: Dementia, distance found from IPP, by terrain type

| farmland | | urban | others | |
|------------|------|-------|------------|------|
| percentile | km | km | percentile | km |
| 10 | 0.40 | 0.16 | 20 | 0.64 |
| 20 | 0.50 | 0.30 | 40 | 1.0 |
| 30 | 0.70 | 0.50 | 60 | 2.0 |
| 40 | 1.0 | 1.0 | 80 | 2.5 |
| 50 | 1.2 | 1.7 | 100 | 9.9 |
| 60 | 2.0 | 2.7 | | |
| 70 | 3.0 | 4.0 | | |
| 80 | 5.2 | 5.0 | | |
| 90 | 8.8 | 8.7 | | |
| 100 | 84 | 33 | | |

- g. **Possible scenarios:** based on the information given above for this category, some of the following comments will probably occur in the most likely scenarios for missing dementia sufferers. In practice, the search manager should not rule out other plausible scenarios.
- the missing person is likely to be found alive (82% of incidents)
 - for incidents in farmland, females are most likely to be found on a travel aid (42%) or in a building (26%); males are equally likely (29%) to be found on a travel aid or next to a linear feature, or in a building (20%)
 - in urban areas, the missing person is most likely to be found on a travel aid (36%) or in a building (29%)

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Despondents

a. **Category definition:** any person who is thought to have disappeared deliberately, generally as a consequence of one or more of the following:

- an intention to commit suicide, either with an explicit threat or considered to be likely based on a history of previous attempts or threats
- depression, either diagnosed or suspected
- stress or distress, due to either personal or domestic problems

Gibb and Woolnough provides a useful discussion about depression³ and suicide⁴.

Reference to the abuse of drugs and alcohol has been removed from the category definition. Statistics relating to those incidents have been put into a new category called Substance Related.

b. **All searches:** n = 457

Table 15: Despondents, by terrain and gender, all searches

| | female | male | other* | total |
|----------------------|--------|------|--------|-------|
| farmland | 54 | 75 | 2 | 131 |
| urban | 46 | 51 | 12 | 109 |
| woodland | 15 | 46 | 2 | 63 |
| moorland | 12 | 45 | 4 | 61 |
| water margin | 10 | 33 | 2 | 45 |
| plantation | 3 | 29 | 0 | 32 |
| crag / broken ground | 3 | 13 | 0 | 16 |
| | 143 | 292 | 22 | 457 |

Table 16: Despondents, by reported characteristic and gender

| | female | male | other* | total |
|---------------------------|--------|------|--------|-------|
| suicide threatened | 41 | 84 | 5 | 130 |
| stress or distress | 33 | 74 | 1 | 108 |
| depression | 44 | 51 | 9 | 104 |
| previous suicide attempts | 26 | 34 | 3 | 63 |

* 'other' means that the gender was not reported

The four characteristics shown in table 16 come from an analysis of the text fields of reports submitted via the data collection system. These were the characteristics of the missing person that were most frequently mentioned. They are not mutually exclusive, so for example a missing person could have been reported as having threatened to commit suicide as well as having a history of previous threats.

All this is dependent entirely on what the individual doing the reporting felt was worth mentioning. This should be borne in mind when considering the conclusions that we have drawn about the behaviour of missing despondents with these characteristics. It is worth noting, however, that 69% of the reports submitted for missing despondents included a reference to at least one of them, which leads us to suspect that where a characteristic was present then it was highly likely to have been reported.

- c. **Fatality rate:** the overall fatality rate for despondents was significantly higher than the fatality rate for all other categories combined. Despondent fatality rates depended on (i) the type of terrain, and (ii) in the case of males, some of the reported characteristics.

(i) by terrain:

There was considerable variation in the fatality rates for despondents missing in different types of terrain, ranging from 18% (moorland) to 56% (water margin); section (d) of this report gives all of the values.

(ii) by reported characteristics:

The fatality rate for females did not vary significantly with any of the reported characteristics; the following comments refer only to males.

The fatality rate for males who had threatened suicide was 21%. This was roughly half of the fatality rate for males who had not threatened suicide (39%). This is a significant difference.

A threat of suicide together with a history of previous suicide threats or attempts made no significant difference to the fatality rate; however, when no threat was made but the missing male had a history of previous threats or attempts then the fatality rate increased from 39% to 54%. This is a significant difference.

When depression was diagnosed or suspected in males, the fatality rate was 51%, compared with 30% where no depression was reported. This is a significant difference, and did not depend on whether or not suicide was threatened.

The presence of stress or personal distress made no significant difference to fatality rates.

- d. Outcome – condition if found:** despondents were significantly different from all the other categories in the study. Overall, significantly fewer despondents were found unhurt, and significantly more were either found injured or not found at all. The percentages varied with the terrain and, in the case of farmland, by gender. The results for plantations and woodland were similar, and were combined for ease of reporting

Table 17: Despondents, outcome by terrain and gender

| | farmland female | | farmland male | | urban all searches | |
|----------|--------------------|----|------------------|----|-----------------------|----|
| | n | % | n | % | n | % |
| fatal | 11 | 20 | 23 | 31 | 32 | 29 |
| injured | 6 | 11 | 8 | 11 | 6 | 6 |
| no trace | 5 | 9 | 8 | 11 | 8 | 7 |
| unhurt | 32 | 59 | 36 | 48 | 63 | 58 |

| | plantations & woodland all searches | | water margin all searches | | all other terrain types all searches | |
|----------|---|----|------------------------------|----|--|----|
| | n | % | n | % | n | % |
| fatal | 37 | 39 | 25 | 56 | 19 | 25 |
| injured | 19 | 20 | 4 | 9 | 15 | 19 |
| no trace | 11 | 12 | 5 | 11 | 5 | 6 |
| unhurt | 28 | 29 | 11 | 24 | 38 | 49 |

e. Location found: significant differences were found between the different types of terrain, and there was a gender difference in farmland. As before, incidents in plantations and woodland have been combined.

Table 18: Despondents, location found by terrain and gender

| | farmland female | | farmland male | | urban all searches | |
|----------------|--------------------|----|------------------|----|-----------------------|----|
| | n | % | n | % | n | % |
| building | 17 | 35 | 28 | 42 | 48 | 48 |
| trees | 7 | 14 | 8 | 12 | 8 | 8 |
| water | 8 | 16 | 3 | 4 | 20 | 20 |
| travel aid | 12 | 24 | 12 | 18 | 14 | 14 |
| open ground | 2 | 4 | 10 | 15 | 7 | 7 |
| linear feature | 2 | 4 | 5 | 7 | 3 | 3 |
| not recorded | 1 | 2 | 1 | 1 | 1 | 1 |

| | plantations & woodland all searches | | moorland all searches | | water margins all searches | |
|----------------|---|----|--------------------------|----|-------------------------------|----|
| | n | % | n | % | n | % |
| building | 11 | 13 | 10 | 18 | 6 | 15 |
| trees | 54 | 64 | 10 | 18 | 4 | 10 |
| water | 5 | 6 | 7 | 12 | 22 | 55 |
| travel aid | 9 | 11 | 15 | 26 | 2 | 5 |
| open ground | 3 | 4 | 9 | 16 | 1 | 3 |
| linear feature | 1 | 1 | 6 | 11 | 4 | 10 |
| not recorded | 1 | 1 | 0 | 0 | 1 | 3 |

| | crag / broken ground all searches |
|----------------|--------------------------------------|
| building | 1 |
| trees | 5 |
| water | 2 |
| travel aid | 1 |
| open ground | 5 |
| linear feature | 1 |
| not recorded | 0 |

Table 19: Despondents, location found by terrain and gender, detail

| | farmland female | | farmland male | | urban all searches | |
|----------------------|---|----|--------------------------|----|----------------------------------|----|
| | n | % | n | % | n | % |
| building | | | | | | |
| building / shelter | 3 | 6 | 15 | 23 | 14 | 14 |
| habitation | 14 | 29 | 13 | 19 | 34 | 34 |
| trees | | | | | | |
| forest / woodland | 4 | 8 | 2 | 3 | 5 | 5 |
| forest edge/clearing | 3 | 6 | 6 | 9 | 3 | 3 |
| travel aid | | | | | | |
| path / track | 1 | 2 | 7 | 11 | 2 | 2 |
| road | 11 | 22 | 5 | 7 | 12 | 12 |
| linear feature | | | | | | |
| stream / ditch | 1 | 2 | 3 | 4 | 1 | 1 |
| wall / fence line | 1 | 2 | 2 | 3 | 2 | 2 |
| | | | | | | |
| | plantations & woodland all searches | | moorland all searches | | water margins all searches | |
| | n | % | n | % | n | % |
| building | | | | | | |
| building / shelter | 2 | 2 | 4 | 7 | 5 | 13 |
| habitation | 9 | 11 | 6 | 11 | 1 | 2 |
| trees | | | | | | |
| forest / woodland | 41 | 49 | 8 | 14 | 3 | 8 |
| forest edge/clearing | 13 | 15 | 2 | 4 | 1 | 2 |
| travel aid | | | | | | |
| path / track | 5 | 6 | 7 | 12 | 1 | 3 |
| road | 4 | 5 | 8 | 14 | 1 | 3 |
| linear feature | | | | | | |
| stream / ditch | 1 | 1 | 4 | 7 | 4 | 10 |
| wall / fence line | 0 | 0 | 2 | 4 | 0 | 0 |

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Table 19 continued

| | crag / broken ground all searches |
|----------------------|--------------------------------------|
| building | |
| building / shelter | 1 |
| habitation | 0 |
| trees | |
| forest / woodland | 5 |
| forest edge/clearing | 0 |
| travel aid | |
| path / track | 0 |
| road | 1 |
| linear feature | |
| stream / ditch | 0 |
| wall / fence line | 1 |

The following additional information was provided with regard to four incidents for which the location was reported as 'open ground': at a high vantage point overlooking the valley, close to a footpath, in a quarry, in the hospital grounds.

Significant locations: in many of the reports submitted to the system (15% of female despondents and 14% of male despondents) there are references to the missing person being found in a location that is significant to them in some way, either because it is a local beauty spot or viewpoint, or they have memories associated with the place ('... went there regularly with the family ...') or they often visited it ('... on the route that he used to take the dog for a walk ...').

Significant locations are linked in particular to male fatalities. There is no significant difference between the likelihood of a fatality when the indication is that a missing female despondent is in a location of this sort compared with any other location.

If there are strong indicators to suggest that a missing male has headed for such a location then it is highly likely that they will be found dead; 62% of missing male despondents found in these places are found dead, compared with 29% who are found in other locations. These are significantly different. If the missing male despondent has not threatened suicide then the fatality rate increases to 70% if they are found in a location of this kind. Again, this is a statistically significant result.

- f. Distance found from IPP:** the distances travelled by despondents were significantly different to the distances travelled by all the other categories in that a greater proportion of despondents was found nearer to the IPP (36% of despondents were found within 0.5 km of the IPP compared to 25% of the other categories); terrain and gender made no significant difference to the distances despondents travelled.

Table 20: Despondents, distance found from IPP, all searches

| <u>percentile</u> | <u>all searches, km</u> |
|-------------------|-------------------------|
| 10 | 0.10 |
| 20 | 0.22 |
| 30 | 0.50 |
| 40 | 0.70 |
| 50 | 1.0 |
| 60 | 1.5 |
| 70 | 2.5 |
| 80 | 5.4 |
| 90 | 15 |
| 100 | 150 |

- g. Possible scenarios:** the principle of 'lines and points' is a useful guide to constructing scenarios for all categories of missing person, and for despondents in particular. 'Points' are the missing person's likely destinations, and the 'lines' are the routes that they could have taken to get there. As a general rule, likely points towards which a missing despondent might be heading are a building, or trees, or a body of water. The likelihood of each of these being the missing person's intended destination depends on the type of terrain in which they are missing, and, in the case of farmland, their gender.

Local knowledge plus information about the missing person's habits and patterns of behaviour should be used in conjunction with tables 18 and 19 to identify likely destinations, in particular places which are either familiar to them or which could be described as scenic.

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Developmental Problems

a. **Category definition:** this category refers to missing persons with a mental age that is very different from their chronological age

b. **All searches:** n = 37

Table 21: Developmental Problems, by terrain and gender, all searches

| | female | male | other* | total |
|---------------------|--------|------|--------|-------|
| urban | 3 | 8 | 1 | 12 |
| farmland | 2 | 9 | 0 | 11 |
| other terrain types | 3 | 11 | 0 | 14 |
| | 8 | 28 | 1 | 37 |

* 'other' means that the gender was not reported

c. **Fatality rate:** the fatality rate for this category was 5%, which is significantly lower than the fatality rate for all the other categories.

d. **Outcome – condition if found:** significantly more missing persons in this category were found unhurt than was the case with other categories. There was no discernible terrain or gender difference.

Table 22: Developmental Problems, outcome, all searches

| | all searches | |
|----------|--------------|----|
| | n | % |
| fatality | 2 | 5 |
| injured | 2 | 5 |
| no trace | 1 | 3 |
| unhurt | 32 | 86 |

- e. **Location found:** the likelihood of a missing person in this category in an urban environment being found in a building was significantly greater than in all the other types of terrain. There were no significant gender differences.

Table 23: Developmental Problems, location found by terrain type

| | urban | non-urban | |
|----------------|-------|-----------|----|
| | n | n | % |
| building | 7 | 8 | 32 |
| trees | 1 | 7 | 28 |
| travel aid | 2 | 4 | 16 |
| water | 0 | 3 | 12 |
| linear feature | 0 | 2 | 8 |
| open ground | 0 | 1 | 4 |
| not recorded | 1 | 0 | 0 |

Table 24: Developmental Problems, location found by terrain type, detail

| | urban | non-urban | |
|------------------------|-------|-----------|----|
| | n | n | % |
| building | | | |
| building / shelter | 3 | 2 | 8 |
| habitation | 4 | 6 | 24 |
| trees | | | |
| forest / woodland | 0 | 6 | 24 |
| forest edge / clearing | 1 | 1 | 4 |
| travel aid | | | |
| path / track | 1 | 1 | 4 |
| road | 1 | 3 | 12 |
| linear feature | | | |
| stream / ditch | 0 | 0 | 0 |
| wall / fence line | 0 | 2 | 8 |

No additional information was provided with regard to one incident for which the location was reported as 'open ground'.

- f. **Distances found from IPP:** there were no discernible differences between the distances travelled by missing persons in this category and all the other categories; there were no discernible terrain or gender differences.

Table 25: Developmental Problems, distance found from IPP, all searches

| <u>percentile</u> | <u>all searches, km</u> |
|-------------------|-------------------------|
| 20 | 0.24 |
| 40 | 0.76 |
| 60 | 2.6 |
| 80 | 10 |
| 100 | 35 |

- g. **Possible scenarios:** based on the information given above, some of the following comments will probably occur in the most likely scenarios for missing persons in this category. In practice, the search manager should not rule out other plausible scenarios.

- the missing person is likely to be found alive (95% of incidents)
- for incidents in urban areas the missing person is most likely to be found in a building (7 out of 12 incidents)
- for incidents in non-urban areas the missing person is most likely to be found in a building (32% of incidents) or among trees (28% of incidents)

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Fell-runner

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 planning as the information given in categories with larger volumes of data. It should be used with caution.

- a. **Category definition:** either a competitor in an event, or training, or out for a recreational run, or orienteering
- b. **All searches:** n = 7; 2 female and 5 male
- c. **Fatality rate:** the fatality rate for this category was 1 fatality out of 7 reported incidents
- d. **Outcome - condition if found:** 1 fatality and 6 unhurt
- e. **Location found:** open ground 3, road 3 and path / track 1; no additional information was provided with regard to the three incidents for which the location was reported as 'open ground'
- f. **Distance found from IPP:** these were 1.1 km, 1.3 km, 2.0 km, 2.9 km, 5.5 km and 6.0 km; the distance was not reported in the remaining incident

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Health Related

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 planning as the information given in categories with larger volumes of data. It should be used with caution.

- a. **Category definition:** a person who has gone missing primarily as a result of problems relating to their health; a person whose behaviour is influenced by their current medical condition
- b. **All searches:** n = 8; 3 female and 5 male
- c. **Fatality rate:** the fatality rate for this category was 2 fatalities out of 8 reported incidents
- d. **Outcome - condition if found:** 2 fatalities, 1 injured and 5 unhurt
- e. **Location found:** road 2, building / shelter 1, forest edge / clearing 1, habitation 1, open ground 1, path / track 1, stream / ditch 1; no additional information was provided with regard to the incident for which the location was reported as 'open ground'
- f. **Distance found from IPP:** these were 1 km, 2 km, 2.5 km, 3 km, 5 km, 5 km, 8 km and 15 km

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Miscellaneous

- a. **Category definition:** any missing person who can not be assigned to one of the other categories, for example a walkaway from a road traffic accident

Some incidents that were previously in this category have been put into the new categories Health Related, Substance Related and Water Related.

- b. **All searches:** n = 29

Table 26: Miscellaneous, by terrain and gender, all searches

| | female | male | mixed group | total |
|---------------------|--------|------|----------------|-------|
| farmland | 1 | 7 | 0 | 8 |
| moorland | 1 | 7 | 0 | 8 |
| other terrain types | 3 | 9 | 1 | 13 |
| | 5 | 23 | 1 | 29 |

- c. **Fatality rate:** the overall fatality rate for this category was 21%, which is not significantly different to the fatality rate for all other categories combined. There was no discernible gender difference.

- d. **Outcome – condition if found:** there was no difference between the outcome for this category and all other categories combined. The numbers of incidents in different types of terrain were too small for adequate analysis.

Table 27: Miscellaneous, outcome, all searches

| | all searches | |
|----------|--------------|----|
| | n | % |
| fatality | 6 | 21 |
| injured | 3 | 10 |
| no trace | 3 | 10 |
| unhurt | 17 | 59 |

- e. **Location found:** the numbers of incidents in different types of terrain were too small for adequate analysis.

Table 28: Miscellaneous, location found, all searches

| | all searches | |
|----------------|--------------|----|
| | n | % |
| building | 10 | 38 |
| travel aid | 7 | 27 |
| open ground | 4 | 14 |
| water | 3 | 12 |
| trees | 2 | 8 |
| linear feature | 0 | 0 |

Table 29: Miscellaneous, location found, all searches, detail

| | all searches | |
|------------------------|--------------|----|
| | n | % |
| building | | |
| building / shelter | 4 | 15 |
| habitation | 6 | 23 |
| travel aid | | |
| path / track | 2 | 8 |
| road | 5 | 19 |
| trees | | |
| forest / woodland | 2 | 8 |
| forest edge / clearing | 0 | 0 |

The following additional information was provided with regard to the one incident for which the location was reported as 'open ground': stuck in a field

- f. Distances found from IPP:** there was no significant difference between this category and all of the other categories combined with regard to the distance from the IPP at which the missing person was found; there were, however, some extreme distances reported for this category.

Table 30: Miscellaneous, distance found from IPP, all searches

| <u>percentile</u> | <u>all searches, km</u> |
|-------------------|-------------------------|
| 20 | 0.36 |
| 40 | 1.7 |
| 60 | 3.1 |
| 80 | 9.9 |
| 100 | 500 |

- g. Possible scenarios:** based on the information given above, some of the following comments will probably occur in the most likely scenarios for missing persons in this category. In practice, the search manager should not rule out other plausible scenarios.

- the missing person is found alive (79%)
- the missing person is found in a building (38%) or on a travel aid (27%)

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Mountain Biker

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 planning as the information given in categories with larger volumes of data. It should be used with caution.

- a. **Category definition:** missing persons for whom the bicycle was the main means of transport, on or off road
- b. **All searches:** n = 6; 5 male and 1 mixed group
- c. **Fatality rate:** the fatality rate for this category was 1 fatality out of 6 reported incidents
- d. **Outcome - condition if found:** 1 fatality, 1 injured and 4 unhurt
- e. **Location found:** open ground 2, building / shelter 1, forest / woodland 1, path / track 1, wall / fence line 1; no additional information was provided with regard to the two incidents for which the location was reported as 'open ground'
- f. **Distance found from IPP:** these were 0.9 km, 1.0 km, 1.2 km, 3.0 km, 24 km and 100 km

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Organised Party

a. **Category definition:** a party with a recognised leader or purpose, for example a DoE expedition, military cadets on a march or expedition, or an informal group of people out for a walk together

b. **All searches:** n = 26

Table 31: Organised Party, by terrain and gender, all searches

| | female | male | other* | total |
|---------------------|--------|------|--------|-------|
| moorland | 6 | 9 | 6 | 21 |
| other terrain types | 1 | 2 | 2 | 5 |
| | 7 | 11 | 8 | 26 |

* 'other' means either a group of mixed gender or that the gender was not reported

c. **Fatality rate:** the overall fatality rate for this category was 4%, which is significantly lower than the fatality rate for all other categories combined. There was no discernible gender difference.

d. **Outcome – condition if found:** there was no difference between the outcome for this category and all other categories combined. There was no discernible gender or terrain difference.

Table 32: Organised Party, outcome, all searches

| | all searches | |
|----------|--------------|----|
| | n | % |
| fatality | 1 | 4 |
| injured | 4 | 15 |
| no trace | 0 | 0 |
| unhurt | 21 | 81 |

e. Location found

There was no discernible terrain or gender difference.

Table 33: Organised Party, location found, all searches

| | all searches | |
|----------------|--------------|----|
| | n | % |
| open ground | 10 | 38 |
| travel aid | 6 | 23 |
| building | 4 | 15 |
| trees | 3 | 12 |
| linear feature | 2 | 8 |
| water | 1 | 4 |

Table 34: Organised Party, location found, all searches, detail

| | all searches | |
|------------------------|--------------|----|
| | n | % |
| travel aid | | |
| path / track | 5 | 19 |
| road | 1 | 4 |
| building | | |
| building / shelter | 3 | 12 |
| habitation | 1 | 4 |
| trees | | |
| forest / woodland | 1 | 4 |
| forest edge / clearing | 2 | 8 |
| linear feature | | |
| stream / ditch | 2 | 8 |
| wall / fence line | 0 | 0 |

No additional information was provided with regard to the ten incidents for which the location was reported as 'open ground', although it is worth noting that in four of these incidents it was reported that the missing persons stayed where they were once they realised that they were lost, and that in two of these incidents they had put up their tents.

f. Distances found from IPP: there was no significant difference between this category and all the other categories combined.

Table 35: Organised Party, distance found from IPP, all searches

| <u>percentile</u> | <u>all searches, km</u> |
|-------------------|-------------------------|
| 20 | 1.0 |
| 40 | 2.6 |
| 60 | 3.5 |
| 80 | 4.6 |
| 100 | 18 |

g. Possible scenarios: based on the information given above, some of the following comments will probably occur in the most likely scenarios for missing persons in this category. In practice, the search manager should not rule out other plausible scenarios.

- the missing persons were found alive (96%)
- the missing persons were found in open ground (38%), on a travel aid (23%) or in a building (15%)

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Other Vulnerables

a. **Category definition:** this category refers to missing persons with significant mental impairment other than those covered by the categories Dementia, Developmental Problems, Health Related, Psychological Illness and Substance Related

b. **All searches:** n = 83

Table 36: Other Vulnerables, by terrain and gender, all searches

| | female | male | other* | total |
|---------------------|--------|------|--------|-------|
| urban | 11 | 17 | 4 | 32 |
| farmland | 9 | 21 | 1 | 31 |
| other terrain types | 6 | 14 | 0 | 20 |
| | 26 | 52 | 5 | 83 |

* 'other' means that the gender was not reported

c. **Fatality rate:** the fatality rate for this category was 13%, which is not significantly different from all the other categories.

d. **Outcome – condition if found:**

Table 37: Other Vulnerables, outcome, all searches

| | all searches | |
|----------|--------------|----|
| | n | % |
| fatality | 11 | 13 |
| injured | 10 | 12 |
| no trace | 4 | 5 |
| unhurt | 58 | 70 |

- e. **Location found:** the locations at which missing persons in this category were found in an urban environment were significantly different from the locations at which they were found in farmland; in addition, there was a significant gender difference for persons who were missing in farmland.

Table 38: Other Vulnerables, location found, by terrain and gender

| | urban all searches | | farmland female | farmland male | | all others |
|----------------|-----------------------|----|--------------------|------------------|----|---------------|
| | n | % | n | n | % | n |
| building | 19 | 59 | 0 | 6 | 29 | 4 |
| travel aid | 6 | 19 | 3 | 7 | 33 | 6 |
| open ground | 2 | 6 | 4 | 3 | 14 | 2 |
| trees | 3 | 9 | 0 | 1 | 5 | 3 |
| linear feature | 1 | 3 | 1 | 2 | 10 | 1 |
| water | 0 | 0 | 0 | 2 | 10 | 1 |
| not recorded | 0 | 0 | 0 | 0 | 0 | 1 |

Table 39: Other Vulnerables, location found, by terrain and gender, detail

| | urban all searches | | farmland female | farmland male | | all others |
|------------------------|-----------------------|----|--------------------|------------------|----|---------------|
| | n | % | n | n | % | n |
| building | | | | | | |
| building / shelter | 5 | 16 | 0 | 1 | 5 | 1 |
| habitation | 14 | 44 | 0 | 5 | 24 | 3 |
| travel aid | | | | | | |
| path / track | 1 | 3 | 0 | 1 | 5 | 4 |
| road | 5 | 16 | 3 | 6 | 29 | 2 |
| trees | | | | | | |
| forest / woodland | 2 | 6 | 0 | 1 | 5 | 3 |
| forest edge / clearing | 1 | 3 | 0 | 0 | 0 | 0 |
| linear feature | | | | | | |
| stream / ditch | 0 | 0 | 1 | 2 | 10 | 1 |
| wall / fence line | 1 | 3 | 0 | 0 | 0 | 0 |

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

- f. **Distances found from IPP:** there were significant differences in the distances from the IPP at which missing persons in this category were found in farmland and urban environments; there was no discernible gender difference.

Table 40: Other Vulnerables, distance found from IPP, by terrain

| percentile | farmland | urban | all other terrain types | |
|------------|----------|-------|-------------------------|------|
| | km | km | percentile | km |
| 20 | 0.46 | 0.00 | 25 | 0.50 |
| 40 | 1.4 | 0.48 | 50 | 2.0 |
| 60 | 2.0 | 1.0 | 75 | 4.1 |
| 80 | 3.6 | 9.4 | 100 | 40 |
| 100 | 50 | 310 | | |

- g. **Possible scenarios:** based on the information given above, some of the following comments will probably occur in the most likely scenarios for missing persons in this category. In practice, the search manager should not rule out other plausible scenarios.

- the missing person is likely to be found alive (92% of incidents involving females, 83% involving males)
- for incidents involving males in urban areas the missing person is most likely to be found in a building (8 out of 17 incidents), on a travel aid (4 out of 17) or among trees (3 out of 17)
- for incidents involving males in farmland the missing person is likely to be found on a travel aid (33%), particularly a road (29%) or in a building (29%)
- for incidents involving females in farmland the missing person is most likely to be found in open ground (4 out of 9 incidents) or on a travel aid, particularly a road (3 out of 9)
- for incidents involving females in urban areas the missing person is most likely to be found in a building (7 out of 11 incidents)
- in urban areas the missing person is likely to be found within 1 km of the IPP (50% of incidents); in all other types of terrain the missing person is likely to be found within 2 km of the IPP (50% of incidents)

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Psychological Illness

a. **Category definition:** persons identified by a medical practitioner as suffering from a mental illness; they may be undergoing treatment, either at home or in an appropriate unit. Gibb and Woolnough⁵ provides a useful discussion about some of these illnesses.

b. **All searches:** n = 63

Table 41: Psychological Illness, by terrain and gender, all searches

| | female | male | other* | total |
|---------------------|--------|------|--------|-------|
| urban | 5 | 13 | 4 | 22 |
| farmland | 10 | 6 | 1 | 17 |
| other terrain types | 5 | 16 | 3 | 24 |
| | 20 | 35 | 8 | 63 |

* 'other' means that the gender was not reported

c. **Fatality rate:** the fatality rate for this category was 21%, which is not significantly different from all the other categories.

d. **Outcome – condition if found:**

Table 42: Psychological Illness, outcome, all searches

| | all searches | |
|----------|--------------|----|
| | n | % |
| fatality | 13 | 21 |
| injured | 4 | 6 |
| no trace | 10 | 16 |
| unhurt | 36 | 57 |

This is significantly different from all the other categories on account of the high proportion of missing persons who were not found ('no trace'); it is worth noting that 9 of the 10 persons who were not found were male.

- e. **Location found:** the locations at which missing persons in this category were found when missing in an urban environment were significantly different from the locations at which they were found when missing in other environments; no significant gender difference was found

Table 43: Psychological Illness, location found, by terrain

| | urban | all other | |
|----------------|--------------|---------------|----|
| | all searches | terrain types | |
| | n | n | % |
| travel aid | 3 | 14 | 41 |
| building | 11 | 5 | 15 |
| open ground | 1 | 5 | 15 |
| trees | 1 | 4 | 12 |
| linear feature | 1 | 3 | 9 |
| water | 1 | 3 | 9 |
| not recorded | 1 | 0 | 0 |

Table 44: Psychological Illness, location found, by terrain, detail

| | urban | all other | |
|------------------------|--------------|---------------|----|
| | all searches | terrain types | |
| | n | n | % |
| travel aid | | | |
| path / track | 1 | 7 | 21 |
| road | 2 | 7 | 21 |
| building | | | |
| building / shelter | 3 | 4 | 12 |
| habitation | 8 | 1 | 3 |
| trees | | | |
| forest / woodland | 0 | 4 | 12 |
| forest edge / clearing | 1 | 0 | 0 |
| linear feature | | | |
| stream / ditch | 0 | 2 | 6 |
| wall / fence line | 1 | 1 | 3 |

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

- f. **Distance found from IPP:** no significant terrain or gender differences were found.

Table 45: Psychological Illness, distance found from IPP, all searches

| <u>percentile</u> | <u>all searches, km</u> |
|-------------------|-------------------------|
| 10 | 0.10 |
| 20 | 0.38 |
| 30 | 0.50 |
| 40 | 0.78 |
| 50 | 1.0 |
| 60 | 2.2 |
| 70 | 3.7 |
| 80 | 7.8 |
| 90 | 12 |
| 100 | 90 |

- g. **Possible scenarios:** based on the information given above, some of the following comments will probably occur in the most likely scenarios for missing persons in this category. In practice, the search manager should not rule out other plausible scenarios.

- the missing person is likely to be found alive (79% of incidents)
- for incidents in urban areas the missing person is likely to be found in a building (11 out of 19 incidents)
- for incidents in other types of the terrain the missing person is likely to be found on a travel aid (41%)
- the missing person is likely to be found within 1 km of the IPP (50% of incidents)

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Substance Related

a. **Category definition:** these incidents were submitted as Despondent or Miscellaneous, but there were sufficient of them to form an independent category; in all cases, the abuse of alcohol or drugs played a significant part

b. **All searches:** n = 33

Table 46: Substance Related, by terrain and gender, all searches

| | female | male | other* | total |
|---------------------|--------|------|--------|-------|
| farmland | 3 | 11 | 0 | 14 |
| urban | 0 | 15 | 2 | 7 |
| other terrain types | 2 | 9 | 1 | 12 |
| | 5 | 25 | 3 | 33 |

* 'other' means that the gender was not reported

c. **Fatality rate:** the fatality rate for this category was 30%, which is not significantly different from all the other categories.

d. **Outcome – condition if found:**

Table 47: Substance Related, outcome, all searches

| | all searches | |
|----------|--------------|----|
| | n | % |
| fatality | 10 | 30 |
| injured | 3 | 9 |
| no trace | 3 | 9 |
| unhurt | 17 | 52 |

This is not significantly different from all the other categories.

e. **Location found:** there were no significant gender or terrain differences

Table 48: Substance Related, location found, all searches

| | all searches | |
|----------------|--------------|----|
| | n | % |
| building | 14 | 47 |
| open ground | 5 | 17 |
| water | 5 | 17 |
| travel aid | 3 | 10 |
| trees | 2 | 7 |
| linear feature | 1 | 3 |

Table 49: Substance Related, location found, all searches, detail

| | all searches | |
|------------------------|--------------|----|
| | n | % |
| building | | |
| building / shelter | 2 | 7 |
| habitation | 12 | 40 |
| travel aid | | |
| path / track | 0 | 0 |
| road | 3 | 10 |
| trees | | |
| forest / woodland | 1 | 3 |
| forest edge / clearing | 1 | 3 |
| linear feature | | |
| stream / ditch | 1 | 3 |
| wall / fence line | 0 | 0 |

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

- f. **Distance found from IPP:** the distances from the IPP at which persons in this category who were missing in farmland were found were significantly greater than the distances at which they were found in other terrain types.

Table 50: Substance Related, distance found from IPP, all searches

| percentile | farmland km | other terrain types km |
|------------|-------------|------------------------|
| 25 | 0.80 | 0.20 |
| 50 | 5.0 | 0.80 |
| 75 | 9.0 | 2.0 |
| 100 | 45 | 7.5 |

- g. **Possible scenarios:** based on the information given above, some of the following comments will probably occur in the most likely scenarios for missing persons in this category. In practice, the search manager should not rule out other plausible scenarios.
- the missing person is likely to be found alive (70% of incidents)
 - the missing person is likely to be found in a building (47% of incidents)
 - for incidents in farmland, the missing person is likely to be found further than 0.5 km from the IPP (83% of incidents)
 - for incidents in other types of terrain, the missing person is likely to be found within 3 km of the IPP (83% of incidents)

Walkers

- a. **Category definition:** anyone aged 17 years or over, engaged in any form of recreational walking; when the incident involves a number of walkers who set out together then reference should also be made to the category Organised Party
- b. **All searches:** n = 201

Table 51: Walkers, by terrain and gender, all searches

| | female | male | mixed group | other* | total |
|----------------------|--------|------|----------------|--------|-------|
| moorland | 18 | 88 | 21 | 7 | 134 |
| crag / broken ground | 7 | 33 | 2 | 6 | 48 |
| other terrain types | 3 | 15 | 1 | 0 | 19 |
| | 28 | 136 | 24 | 13 | 201 |

* 'other' means either that the gender was not reported or was transgender

- c. **Fatality rate:** the overall fatality rate for walkers was 11%, which is significantly lower than the fatality rate for all other categories combined. Males accounted for 22 of the 23 reported fatalities, giving male walkers a fatality rate of 16%, which is significantly less than the overall fatality rate for males in other categories. The fatality rate for male walkers missing in moorland (8%) was significantly less than for male walkers missing in crags / broken ground (27%). The fatality rate for male walkers missing in other types of terrain (6 fatalities in 15 reported incidents, i.e. 40%) is certainly worth mentioning; two of these were reported as having had heart attacks. No fatalities were reported for mixed groups of walkers.
- d. **Outcome – condition if found:** significantly more persons in this category were found unhurt and significantly fewer reported as missing without trace than was the case with all the other categories. Apart from the comments reported concerning fatality rates, there were no discernible terrain differences.

Table 52: Walkers, outcome by gender

| | female | | male | | mixed group | |
|----------|--------|----|------|----|----------------|-----|
| | n | % | n | % | n | % |
| fatality | 0 | 0 | 22 | 16 | 0 | 0 |
| injured | 4 | 14 | 7 | 5 | 0 | 0 |
| no trace | 0 | 0 | 2 | 1 | 0 | 0 |
| unhurt | 24 | 86 | 105 | 77 | 24 | 100 |

- e. Location found:** there was no significant difference between terrain types; there was though a gender difference in relation to the number of missing persons found in open ground and on a travel aid, in that significantly more males than females were found in open ground, and significantly more females than males were found on a travel aid.

Table 53: Walkers, location found by gender

| | female | | male | | mixed group | | other* |
|----------------|--------|----|------|----|-------------|----|--------|
| | n | % | n | % | n | % | n |
| open ground | 7 | 25 | 59 | 44 | 8 | 33 | 3 |
| travel aid | 11 | 39 | 28 | 21 | 6 | 25 | 5 |
| building | 6 | 21 | 30 | 22 | 8 | 33 | 4 |
| linear feature | 1 | 4 | 10 | 7 | 2 | 8 | 0 |
| trees | 2 | 7 | 5 | 4 | 0 | 0 | 1 |
| water | 1 | 4 | 2 | 1 | 0 | 0 | 0 |

Table 54: Walkers, location found by gender, detail

| | female | | male | | mixed group | | other* |
|----------------------|--------|----|------|----|-------------|----|--------|
| | n | % | n | % | n | % | n |
| travel aid | | | | | | | |
| path / track | 7 | 25 | 17 | 13 | 4 | 17 | 3 |
| road | 4 | 14 | 11 | 8 | 2 | 8 | 2 |
| building | | | | | | | |
| building / shelter | 3 | 11 | 15 | 11 | 6 | 25 | 3 |
| habitation | 3 | 11 | 15 | 11 | 2 | 8 | 1 |
| linear feature | | | | | | | |
| stream / ditch | 0 | 0 | 4 | 3 | 1 | 4 | 0 |
| wall / fence line | 1 | 4 | 6 | 4 | 1 | 4 | 0 |
| trees | | | | | | | |
| forest / woodland | 2 | 7 | 3 | 2 | 0 | 0 | 1 |
| forest edge/clearing | 0 | 0 | 2 | 1 | 0 | 0 | 0 |

* 'other' means either that the gender was not reported or was transgender

The following additional information was provided with regard to 21 incidents for which the location was reported as 'open ground':

fatalities: found on crags, had fallen from the ridge (2), on a scree slope
 non-fatal: following a ridgeline, near a path, on steep frozen ground, at top of escarpment, sheltering in boulders, on the expected route, in the area of a main path, at a small cairn, at crossroads of footpaths, adjacent to small tarn, on summit ridge (2), behind boulder, steep crag, snow filled gully, Snowdon summit, in tent at a camp site.

- f. Distances found from IPP:** walkers were found significantly further from the IPP compared to all the other categories. There was a significant gender difference for walkers missing in moorland, in that males were found further from the IPP than females. There was no gender difference for walkers missing in crag / broken ground. The remaining types of terrain were significantly different in that all missing walkers were found within 3 km of the IPP. In all types of terrain, the distances at which mixed groups of walkers were found were similar to the distances at which male walkers were found.

Table 55: Walkers, distance found from IPP, by terrain and gender

| moorland females | | moorland males | | crag / broken ground all searches | | other terrain types all searches | |
|------------------|-----|----------------|------|-----------------------------------|------|----------------------------------|------|
| %-ile | km | %-ile | km | %-ile | km | %-ile | km |
| 25 | 1.0 | 10 | 0.50 | 20 | 0.76 | 25 | 0.50 |
| 50 | 1.6 | 20 | 1.0 | 40 | 2.2 | 50 | 1.0 |
| 75 | 3.2 | 30 | 2.0 | 60 | 3.6 | 75 | 2.1 |
| 100 | 7.8 | 40 | 2.5 | 80 | 5.6 | 100 | 3.0 |
| | | 50 | 3.7 | 100 | 200 | | |
| | | 60 | 4.7 | | | | |
| | | 70 | 5.1 | | | | |
| | | 80 | 6.8 | | | | |
| | | 90 | 10 | | | | |
| | | 100 | 510 | | | | |

- g. Possible scenarios:** based on the information given above, some of the following comments will probably occur in the most likely scenarios for missing persons in this category. In practice, the search manager should not rule out other plausible scenarios.

- if the incident involves a missing female walker or a mixed gender group of walkers then they are likely to be found alive and unhurt (females 100% likelihood of being alive, 86% likelihood of being unhurt, mixed group 100% likelihood of being alive and unhurt)
- if the incident involves a missing male walker then he is likely to be found alive (92% in moorland, 73% in crags / broken ground)
- if the incident involves a male walker missing in any other environment then he is likely to be found alive (60%)
- a missing male walker is likely to be found in open ground (44%), in a building (22%) or on a travel aid (21%)
- a missing female walker is likely to be found on a travel aid (39%), in open ground (25%) or in a building (21%)
- a missing mixed group of walkers is equally likely to be found in open ground or in a building (both 33%), or on a travel aid (25%)

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Water Related

a. **Category definition:** these incidents were originally contained within the category Miscellaneous, and all relate to incidents occurring on or in water, for example missing swimmers, fisherman, or people who fell in. Gibb and Woolnough⁶ provides a useful discussion about bodies missing in water.

b. **All searches:** n = 11

Table 56: Water Related, by terrain and gender, all searches

| | female | male | other* | total |
|--------------|--------|------|--------|-------|
| farmland | 1 | 1 | 0 | 2 |
| water margin | 0 | 8 | 1 | 9 |
| | 1 | 9 | 1 | 11 |

* 'other' means that the gender was not reported

c. **Fatality rate:** the fatality rate for this category was 9 out of 11 incidents, which is significantly higher than all the other categories

d. **Outcome – condition if found:**

Table 57: Water Related, outcome, all searches

| | all searches |
|----------|--------------|
| | n |
| fatality | 9 |
| injured | 1 |
| no trace | 1 |
| unhurt | 0 |

e. Location found:

Table 58: Water Related, location found, all searches

| | all searches |
|----------------|--------------|
| | <u>n</u> |
| water | 9 |
| linear feature | 1 |

Table 59: Water Related, location found, all searches, detail

| | all searches |
|-------------------|--------------|
| | <u>n</u> |
| linear feature | |
| stream / ditch | 1 |
| wall / fence line | 0 |

f. Distance found from IPP:

Table 60: Water Related, distance found from IPP, all searches

| <u>percentile</u> | <u>all searches, km</u> |
|-------------------|-------------------------|
| 25 | 0.05 |
| 50 | 0.20 |
| 75 | 1.2 |
| 100 | 4.5 |

g. Possible scenarios: based on the information given above, some of the following comments will probably occur in the most likely scenarios for missing persons in this category. In practice, the search manager should not rule out other plausible scenarios.

- the missing person is likely to be found dead (9 out of 11 incidents)
- the missing person is likely to be found in the water (9 out of 11 incidents)

Appendices: definitions and terminology

Appendix 1: Category definitions

Users are advised that there have been changes made to the categories in this report; refer to page 5 for details.

Children aged 1 to 16 years ... children whose chronological age is in the range 1 to 16 years, and who have had a history of normal development

Climber ... a climber on or off route, accessing into or out of the climb

Dementia ... a person with some form of dementia, including those suffering from Alzheimer's Disease

Despondent ... any person who is thought to have disappeared deliberately, generally as a consequence of one or more of the following:

- an intention to commit suicide, either with an explicit threat or considered to be likely based on a history of previous attempts or threats
- depression, either diagnosed or suspected
- stress or distress, due to either personal or domestic problems

Developmental Problems ... a person with a mental age that is very different from their chronological age

Fell-runner ... either a competitor in an event, or training, or out for a recreational run, or orienteering

Health Related ... a person who has gone missing primarily as a result of problems relating to their health; a person whose behaviour is influenced by their current medical condition

Miscellaneous ... a person who cannot be assigned to one of the other categories

Mountain Biker ... a person for whom the bicycle was the main means of transport, on or off road

Organised Party ... a party with a recognised leader or purpose

Other Vulnerables ... a person with significant mental impairment other than those covered by the categories Dementia, Developmental Problems, Psychological Illness and Substance Related

Psychological Illness ... a person identified by a medical practitioner as suffering from a mental illness; they may be undergoing treatment, either at home or in an appropriate unit

Substance Related ... a person for whom the abuse of alcohol or drugs played a significant part in their being missing

Walker ... a person engaged in any form of recreational walking

Water Related ... a person engaged in an activity on or in water

Appendix 2: Terrain types

crag / broken ground ... rugged upland
farmland ... lowland arable or pasture
moorland ... remote areas of upland or wilderness where rocky outcrops are in the minority
plantation (dense) ... developed forest or plantation
urban ... within the confines of a city, town or village or hamlet
water margin ... coastline, shoreline of large bodies of water or rivers, as well as the water itself
woodland (open) ... parkland or wooded area where passage is relatively easy

Appendix 3: Outcome - the condition of the subject if found

fatality ... dead when found
injured ... needed significant medical treatment when found
unhurt ... did not need significant medical treatment when found
no trace ... not found

Appendix 4: Location - the feature that best describes where the person was found

building / shelter ... any man-made structure not usually used or intended for human habitation
forest / woodland ... any forest or plantation where progress is difficult except on paths, tracks or roads
forest edge / clearing ... open woodland, or adjacent to a forest or wood, or a significant open area within a forest or wood
habitation ... a man-made structure used or intended for human habitation
open ground ... not on, in or immediately adjacent to any other location described here
path / track ... not metalled (paved), may be suitable for vehicles
road ... metalled (paved), classified or unclassified
stream / ditch ... a drainage that can be easily crossed on foot
wall / fence line ... any man-made structure enclosing an area of land
water / water's edge ... in or adjacent to a body of water that could not be easily crossed on foot

References

- 1 Gibb GJ, Woolnough P. *Missing Persons*. Aberdeen: Grampian Police, 2007, pp 4–7. Available from URL:
<http://www.searchresearch.org.uk/www/ukmpbs/>
- 2 *ibid*, pp 28-29
- 3 *ibid*, pp 13-16
- 4 *ibid*, pp 17-23
- 5 *ibid*, pp 34-38
- 6 *ibid*, pp 42-43