Monitor of Engagement with the Natural Environment

The national survey on people and the natural environment

Technical Report from the 2013-14 survey

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Natural England Joint Report JP010
ISBN 978-1-78354-151-5
First published 14 January 2015

Foreword

Natural England produces a range of reports providing evidence and advice to assist us in delivering our duties.

Background

In 2009 Natural England, Defra and the Forestry Commission commissioned TNS to undertake the

Monitor of Engagement with the Natural Environment (MENE) survey for the first time.

In the five years since a wealth of information has been collected about visits taken to the natural environment and related behaviours and attitudes.

The data enables Natural England, its partners and data users to:

- Understand how people use, enjoy and are motivated to protect the natural environment.
- Monitor changes in use of the natural environment over time, at a range of different spatial scales and for key groups within the population.
- Inform on-the-ground initiatives to help them link more closely to people's needs.
- Evaluate the impact and effectiveness of related policy and initiatives.
- Measure the impact of and inform policy relating to the natural environment.

The MENE thematic report

This report provides full details of the survey methodology, sampling, grossing and weighting and estimates of confidence intervals for the fifth year of MENE fieldwork from March 2013 to February 2014. It also includes:

- The full questionnaire script.
- A technical note on what the expenditure data tells is.
- Guidance on the overall strengths and limitations of the data.

Published alongside this report are:

- An annual report presenting the findings for the fifth year of MENE fieldwork. In addition new analysis of the survey findings was undertaken to look deeper at several key topics such as health and wellbeing, expenditure, and the gap between valuing the natural environment, and taking action to conserve it.
- An electronic data table viewer: an interactive tool which allows detailed analysis of the MENE dataset.

Please see GOV.UK for further outputs from the survey: https://www.gov.uk/government/statistics/

National Statistics

The UK Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- Meet identified user needs.
- Are well explained and readily accessible.
- Are produced according to sound methods.
- Are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

The responsible Statistician for this publication is Stephen Herbert:
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Keywords: visits, engagement, natural environment, participation, motivations, barriers, activities and expenditure

This report can be downloaded from the Natural England website: www.gov.uk/government/statistics/monitor-of-engagement-with-the-natural-environment-2012-to-2013

For information on Natural England publications contact the Natural England Enquiry Service on 0845 600 3078 or e-mail **MENE@naturalengland.org.uk.**

ISBN 978-1-78354-151-5

Publication number: JP010

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1 Introduction

1.12 This report outlines the methods and technical details of the Monitor of Engagement with the Natural Environment (MENE) survey. The survey collects detailed information on people's use and enjoyment of the natural environment, focusing on visits to the natural environment. This report relates to the five years of surveying from March 2009 to February 2014.

1.13 The survey was undertaken by TNS on behalf of Natural England, the Department for Environment, Food and Rural Affairs (Defra) and the Forestry Commission.

Background

1.14 Natural England, Defra and the Forestry Commission commissioned TNS to undertake the MENE survey. This survey provides the most comprehensive dataset yet available on people's use and enjoyment of the natural environment. It includes information on visits to the natural environment (including short, close to home visits) as well as other ways of using and enjoying the natural environment. In addition, MENE is the first time a survey of this type has been conducted over consecutive years, allowing for greater confidence when tracking trends over time.

Survey aims and objectives

1.7 This survey aims to provide information about the relationship between people and the natural environment. Whilst the main focus of the survey is on visits, it also seeks to capture other ways of using or enjoying the natural environment such as time spent in the garden and watching nature programmes on television.

1.8 The objectives of the survey are to:

- provide estimates of the number of visits to the natural environment by the English adult population (16 years and over);
- measure the extent of participation in visits to the natural environment and find out the barriers and drivers that shape participation;
- provide robust information on the characteristics of visitors and visits to the natural environment;
- measure other ways of using and enjoying the natural environment; and
- identify patterns in use and participation for key groups within the population and at a range of spatial scales.

Survey scope

1.9 The survey relates to engagement with *the natural environment*. By natural environment we mean all green open spaces in and around towns and cities as well as the wider countryside and coastline.

1.10 The main focus of the survey is on *visits to the natural environment*. By visits to the natural environment we mean time spent outdoors in the natural environment, *away from home and private gardens*.

1.11 The survey also includes a smaller section of questions regarding engagement with the natural environment other than that experienced during visits. This includes activities such as time spent in private gardens, watching nature programmes on television and undertaking pro-environmental activities such as recycling.

Structure of the report

1.13 This technical report provides details of the methods used for MENE and the levels of accuracy of the survey outputs. These appear under the following section headings:

Section 2: Data collection – covering the rationale for the survey approach, a description of the TNS in-home omnibus, sampling, questionnaire and interviewer training.

Section 3: Data analysis – covering data checking and coding, geocoding and the weighting and grossing of survey data.

Section 4: Levels of accuracy – the results of an analysis of the Complex Standard Errors associated with the MENE data.

Appendices:

Appendix 1: MENE Questionnaire – including details of base, timing and additional notes

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2 Data collection

2.12 This section of the report describes the approach to data collection. Areas covered include survey scoping and piloting, sampling approach, achieved sample size, questionnaire design and interviewer briefing.

Scoping stages and piloting

2.13 The methods used in MENE were developed through a scoping study undertaken in 2007. The aim of the study was to identify the most appropriate survey methods to measure participation in visits to the natural environment amongst the English adult population.

2.14 It involved:

- Consultations with the organisations likely to be end users of a study of this type, to ensure that their information needs were taken into account.
- Qualitative research with members of the public to test their understanding of potential questionnaire wording options.
- Pilot surveys using online, telephone and face-to-face survey approaches, allowing a direct comparison of the results obtained using each method.

2.15 The study concluded that an in-home interview method was the most appropriate and that the inclusion of a series of questions on a weekly basis in a consumer omnibus survey would represent the most cost effective approach for a future study.

2.16 Undertaking interviewing using a face to face approach was recommended for a study of this type, as it would provide the best quality of data, with interviewers able to clarify points to respondents. This approach also facilitated the use of show prompts, such as lists of answer options.

2.17 Including the questions on every wave of a weekly omnibus survey meant that respondents could be asked about any visit they had taken during the last seven days, providing better quality data than if a longer recall period was used[1]. Also, the nationally representative sample obtained in every week of the survey allowed for the questionnaire to be split into modules with certain questions asked every week, some asked once a month and others asked less often or on a one off, 'ad hoc' basis.

2.18 Following the recommendations of the scoping study, data collection for the first year of MENE commenced with a pilot wave of fieldwork in February 2009, prior to the launch of the main survey period.

2.19 This pilot survey involved 1,763 interviews undertaken between 13th February 2009 and 17th February 2009 and allowed for final testing of the questionnaire. The purpose of this phase was to verify certain key elements of the survey approach including:

- Refining the definitions used in the survey including 'a visit', 'the outdoors' and 'the natural environment'. This included agreeing the best ways to communicate these definitions to survey respondents and finalising the relevant introductory wording in the questionnaire.

[1] A review of the 2002/03 Great Britain Day Visits Survey concluded that 'a two week recall period is simply too long for respondents' see Day Visits Quality Assurance, National Centre, 2004

- Refining other parts of the questionnaire including decisions on which questions should be asked on a weekly, monthly or quarterly basis.

Summary of approach

2.20 The main survey data collection commenced on 6th March 2009. The survey involves weekly waves of interviewing on the TNS in-home Omnibus Survey with respondents asked about visits taken in the seven days preceding the interview. In each wave, interviews are undertaken with a representative sample of the English adult population (aged 16 and over) with a sample of at least 800 achieved across at least 100 sample points.

2.21 The number of visits taken in each of the seven days and key details of these visits (type of place visited, duration of visit, activities undertaken) are recorded. One of the visits taken is then randomly selected and the respondent is asked to provide more details on this single visit (including type of place visited, specific location visited, distance travelled, where the visit started from and modes of transport used).

2.22 While the majority of survey questions are included in every weekly wave of the survey, some are asked on a monthly basis while a series of questions regarding other forms of engagement with the natural environment, such as watching nature programmes on television and engagement in pro-environmental activities such as recycling, are asked on a quarterly basis.

2.23 Each wave of fieldwork is conducted over five days of the week (Friday to Tuesday inclusive). Using a seven day recall period also makes it necessary to undertake interviewing in every week of the year. The TNS Omnibus survey operates over 51 weeks of the year, with no fieldwork for one week during the Christmas period. However, recognising that visits taken during the holiday week could vary somewhat from other times of year, an additional module of questions has been included in the survey wave undertaken in the following week to collect data on this 'gap' period (see below for further details on the Christmas Gap).

TNS in-home omnibus survey

2.24 Two face-to-face omnibus surveys are operated by TNS, one with a weekly fieldwork period from Wednesday to Sunday inclusive, the other with a fieldwork period from Friday to Tuesday inclusive. In every wave, representative samples of 2,000 UK adults aged 16 years and over – a total of 4,000 interviews per week – are achieved. Both surveys use the latest in Computer Assisted Personal Interviewing (CAPI) software and tablet computers.

2.25 The MENE questions are included in every week of the in-home omnibus which operates from Friday to Tuesday inclusive. Questions are asked of respondents in England only (at least 80 per cent of the total sample) and of around half the sample in each sampling point. Therefore, at least 800 respondents are asked the MENE questions each week.

2.26 The MENE question set is consistently included in the second position of the omnibus questionnaire and always asked within the first minute of the interview.

Sampling approach

2.27 The TNS in-home Omnibus Survey uses a computerised sampling system which integrates the Post Office Address (PAF) file with the 2001 Census small area data at output area level. This enables replicated waves of multi-stage stratified samples to be drawn with accurate and up to date address selection using PPS methods (probability proportional to size). This is explained in greater detail below.

2.28 The TNS in-home Omnibus Survey has Random Location Sampling as its sampling basis and a unique sampling system has been developed for this purpose. Utilising 2001 UK Census small area statistics and the Post Office Address File (PAF), Great Britain - south of the Caledonian Canal has been divided into 600 areas of equal population. From these 600 areas, a master sampling frame of 300 sample points has been selected to reflect the country's geographical and socio-economic profile. The areas within each Standard Region are stratified into population density bands and within band, in descending order by percentage of the population in socio-economic Grade I and II.

2.29 To maximise the statistical accuracy of the sampling, sequential waves of fieldwork are allocated systematically across the sampling frame to ensure maximum geographical dispersion. The 300 primary sampling units are allocated to 12 sub-samples of 25 points each, with each sub-sample in itself being a representative drawing from the frame. For each wave of fieldwork, a set of sub-samples is selected in order to provide the number of sample points required (typically c. 139 for 2,000 interviews). Across sequential waves of fieldwork all sub-samples are systematically worked, thereby reducing the clustering effects on questionnaires asked for two or more consecutive weeks.

2.30 Each primary sampling unit is divided into two geographically distinct segments, both containing, as far as possible, equal populations. The segments comprise aggregations of complete postcode sectors. Within each half (known as the A and B halves) postcode sectors have been sorted by the percentage of the population in socio-economic groups I and II. One postcode sector from each primary sampling unit is selected for each survey wave, alternating on successive selections between the A and B halves of the primary sampling unit, again to reduce clustering effects. For each wave of interviewing, each interviewer is supplied with two blocks of 70 addresses, drawn from different parts of the sector.

2.31 To ensure a balanced sample of adults within the effective contacted addresses, a quota is set by sex (male, female housewife, female non-housewife); within the female housewife quota, presence of children and working status and within the male quota, working status. In each weekly wave of the survey, a target of 2,000 interviews is set and the survey data is weighted to ensure that the sample is representative of the UK population in terms of the standard demographic characteristics (see Section 3 for details of the bespoke weighting procedures used in MENE).

2.32 In each weekly wave, at least 1,600 interviews are undertaken in England. The MENE survey is included within a half sample of the English element of the survey, generating at least 800 interviews per week across at least 100 sample points. The half sample is obtained by automatically asking the questions of every other respondent included in an interviewing shift.

2.33 Within each sample point, only one interview is undertaken per household and a minimum of three households is left between each successful interview. As the MENE questions are asked in every other interview, this interval is increased to at least six households. This procedure ensures that interviewing in each sample point is not restricted to a small geographic area containing individuals with similar demographic and lifestyle characteristics thereby further minimising the effects of clustering within the sample.

Sample sizes achieved

2.34 The total samples of respondents and visits asked about in each of the five years of surveying and in total, including the Christmas gap additional survey wave are shown in Table 2-1 below.

Table 2-1 Total samples achieved – respondents and visits

	Total respondents	Visit takers (last 7 days)	All visits asked about (key details Q2 and Q4*)	Randomly selected visits asked about (1 visit per visit taker, Q3, Q5-Q11/Q16*)
Weekly questions included in every weekly survey wave				
March 2009 – February 2010	48,514	20,374	58,653	20,374
March 2010 – February 2011	46,099	17,389	47,825	17,389
March 2011 – February 2012	47,418	19,014	53,898	19,014
March 2012 – February 2013	46,749	18,185	53,208	18,185
March 2013 – February 2014	46,785	18,808	55,897	18,808
Total	**235,565**	**93,770**	**269,481**	**93,770**
Monthly questions included in last survey wave each month				
March 2009 – February 2010	11,107	4,755	n/a	4,755
March 2010 – February 2011	10,630	3,973	n/a	3,973
March 2011 – February 2012	10,587	4,421	n/a	4,421
March 2012 – February 2013	10,544	4,034	n/a	4,034
March 2013 – February 2014	10,552	4,309	n/a	4,309
Total	**53,420**	**21,492**	**n/a**	**21,492**
Quarterly questions included in 4 survey waves per year				
March 2009 – February 2010	3,549	1,452	n/a	1,452
March 2010 – February 2011	3,568	1,297	n/a	1,297
March 2011 – February 2012	3,544	1,506	n/a	1,506
March 2012 – February 2013	3,528	1,328	n/a	1,328
March 2012 – February 2013	3,535	1,472	n/a	1,472
Total	**14,189**	**5,583**	**n/a**	**5,583**

*Prior to April 2012 Question 3 (visit duration) was asked about all visits but since then this question has been asked about a single randomly selected visit only.

2.35 Over the five years of surveying, a total of 235,565 interviews were undertaken and of this total, 93,770 respondents had taken a visit to the natural environment in the seven days prior to the interview (40 per cent of the total).

2.36 Key details (duration of visits, general type of place visited and activities) were asked for up to ten of the visits taken by each respondent. As such, these details were recorded for 269,481 visits over the five years of surveying.

2.37 Three per cent of the 93,770 visit takers had taken more than ten visits in the previous seven days but, to prevent an excessively long interview duration, these respondents were not asked for details of all of the visits they had taken. In these cases, the total volume of visits taken was recorded and this data was used in the weighting stages to ensure that the survey results were as representative as possible of all visits taken (see Section 3). The 269,481 visits for which details have been recorded represents 95 per cent of the total number of 282,299 taken by respondents during the survey period.

2.38 Each visit-taking respondent was asked to provide further information on one of the visits they had taken (the visit is automatically selected at random by the CAPI script). As such over the five years of surveying, further details were collected for a total of 93,770 visits.

2.39 As described in more detail below, while most questions were asked every week, certain questions were only asked in the last week of each month while others were asked once a quarter. Table 2-1 illustrates the respondent and visit base sizes for these question modules.

Sample sizes by region and groups of interest

2.40 Table 2-2 overleaf illustrates the respondent and visit sample sizes achieved in each year of surveying and overall by region and for certain key demographic groups of interest to Natural England.

Table 2-2 Total samples achieved by region and groups of interest Year One (March 2009 to February 2010), Year Two (March 2010 to February 2011), Year Three (March 2011 to February 2012), Year 4 (March 2012 to February 2013), Year 5 (March 2013 to February 2014) and total period

	Total respondents						All visits asked about (key details Q2 and Q4)*						Randomly selected visits asked about (1 visit per visit taker)					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Total
By region																		
North East	2,452	2,374	2,472	2,421	2,448	12,167	3,026	3,115	3,662	3,692	3,744	17,239	992	959	1,058	1,103	1,083	5,195
North West	6,563	6,283	6,511	6,373	6,326	32,056	6,408	5,337	6,310	7,418	7,276	32,749	2,463	2,183	2,384	2,546	2,488	12,064
Yorkshire and the Humber	4,917	4,723	4,805	4,726	4,723	23,894	5,600	5,351	5,659	5,315	5,724	27,649	1,891	1,848	1,985	1,790	1,808	9,322
East Midlands	4,148	3,917	4,085	3,900	4,058	20,108	5,256	4,477	5,279	4,533	4,219	23,764	1,718	1,505	1,676	1,437	1,476	7,812
West Midlands	5,206	4,926	5,022	4,952	4,972	25,078	4,921	4,237	5,641	5,532	6,130	26,461	1,816	1,631	2,034	1,875	1,975	9,331
South West	4,765	4,671	4,751	4,605	4,546	23,338	8,315	7,998	7,950	7,194	7,399	38,856	2,492	2,362	2,407	2,210	2,215	11,686
East England	5,407	5,011	5,143	5,072	5,098	25,731	8,011	5,505	6,809	5,890	6,382	32,596	2,636	2,026	2,315	2,034	2,185	11,196
London	7,020	6,588	6,865	6,949	7,014	34,436	5,690	3,251	4,060	5,281	5,452	23,734	2,475	1,782	2,085	2,226	2,331	10,899
South East	8,036	7,606	7,764	7,751	7,600	38,757	11,426	8,554	8,528	8,353	9,571	46,432	3,891	3,100	3,070	2,964	3,247	16,272
By group																		
BME Population	5,581	5,912	6,235	6,810	6,479	31,017	2,985	2,264	3,212	3,627	3,575	15,663	1,506	1,273	1,682	1,794	1,776	8,031
Disability or long term illness	10,294	9,425	9,997	9,875	9,918	49,509	10,141	7,981	9,222	9,198	9,875	46,417	3,228	2,658	2,988	2,848	2,987	14,709
Residents of bottom 10% Index of Multiple Deprivation	5,462	5,076	5,625	5,669	5,493	27,325	4,035	3,284	4,100	4,889	4,675	20,983	1,589	1,311	1,585	1,832	1,679	7,996
Aged 16 to 24	6,241	6,191	6,412	6,815	6,458	32,117	6,212	4,935	5,943	6,349	6,477	29,916	2,673	2,210	2,527	2,545	2,570	12,525

*Prior to April 2012 Question 3 (visit duration) was asked about all visits but since then this question has been asked about a single randomly selected visit only.

Questionnaire design

2.41 The MENE questionnaire was divided into a series of modules with certain questions included in every weekly survey wave while others were included in one survey wave per month or once every three months. Table 2-3 details the question areas included at each level of frequency and the base of respondents asked each question. A copy of the questionnaire is provided in Appendix 1.

Table 2-3 Questionnaire topics and frequency of inclusion in survey fieldwork

Questions included in every weekly survey wave	Questions asked in 12 survey wave per year. Included during last week of each month.	Questions asked in 4 survey waves per year. Included during May, August, November and February
Question asked of all respondents Q1 – Volume of visits per day over last 7 days **Questions asked of visit takers regarding all visits taken (up to a maximum of 10 visits)** Q2 – Type of place visited (general) Q4 – Activities undertaken **Questions asked of visit takers regarding single randomly selected visit only** Q3 – Visit duration* Q5 – Type of place visited (specific) Q6 – Village/town/city visited Q7 – Name of actual place visited or details of location if no name Q8 – Distance travelled to place visited Q9/10 – Where journey started from Q11 – Mode of transport used Q12 – Reasons for visit** **Profile questions asked of all respondents** Q19 – Access to car Q20 – Dog ownership Q21 – Frequency of undertaking exercise Q22 – Disability and long term illness	**Questions asked of visit takers regarding single randomly selected visit only** Q13 – Party composition Q14 – Whether a dog/dogs were taken on visit Q15/16 – Expenditure during visit **Visit participation question asked of all respondents** Q17 – Frequency of visits during last 12 months **Barriers question asked of respondents who normally take visits less than once a month** Q18 – Barriers to visits during last 12 months	**Question asked of visit takers regarding single randomly selected visit only** E1 – Outcomes of visit **Environmental attitudes and behaviours questions asked of all respondents** E2 – Attitudes to environment E3 – Activities in the natural environment E4 – Pro-environmental activities E5 – Changes in lifestyle

*Prior to April 2012 Question 3 (visit duration) was asked about all visits but since then this question has been asked about a single randomly selected visit only. **Prior to April 2012 Question 12 was included in the survey in a single monthly wave but since then has been included in every weekly wave

2.42 The approach followed involved respondents firstly being asked about the volume of visits taken in each of the seven days preceding the interview (Q1). Key details of up to ten of these visits were then recorded (Q2 type of place visited and Q4 activities undertaken since April 2013 and, prior to this date, Q3 duration of visit). In practice, the vast majority of respondents had taken ten or less visits (97 per cent of respondents in all five years of surveying).

2.43 If more than one visit had been taken in the last seven days (22 per cent of respondents in year five), one of the visits was randomly selected as the basis for further questions. This approach ensured that there was no bias in the visit selection and the CAPI software was used to automatically make the random selection of one of the visits taken by each respondent.

2.44 In each wave, the questionnaire also contained profiling questions which were asked of all respondents regarding access to a car, dog ownership, frequency of undertaking exercise and disabilities and long term illnesses. These are in addition to the classification questions included as standard in the TNS in-home Omnibus Survey. In addition, the following data was collected for all respondents (also see Appendix 2):

- Age;
- Sex;
- Socio-economic status (A, B, C1, C2, D and E groups);
- Working status;
- Marital status;
- Children in home/ life stage (for example, Young Independents, Family, Empty Nester);
- Region of residence;
- Full home postcode (available for all respondents, used for Index of Multiple Deprivation, urban – rural classification and other classifications);
- Ethnicity;
- Internet access and usage; and
- Housing tenure.

2.45 Other questions are asked of all respondents once a month about their normal frequency of visit taking and (if less than once a month), barriers to participation. In each quarter, other questions are asked of all respondents regarding other forms of engagement with the natural environment, attitudes to the environment and pro-environmental behaviours.

A seven day recall period

2.46 Evaluations of previous studies undertaken for Natural England and its predecessors have recognised there is trade-off between the recall period people are asked to consider, and the number of visits that can be recorded within the interview.

2.47 In the 2002 Great Britain Day Visits Survey (GBDVS), respondents were asked about visits taken during the two weeks before the interview. An independent review of the results, undertaken by the National Centre for Social Research in 2004[2], found that respondents were likely to have a higher level of recall of trips taken in the seven days immediately prior to the interview than for the preceding seven days. This issue related particularly to shorter, more regularly taken visits, which were less likely to be recalled for the earlier period. Given the conclusions of this review and experience in other surveys of participation, it was

[2] Day Visits Quality Assurance, National Centre, 2004

decided that a seven day recall period provided the best approach for MENE, collecting accurate data for a large base of visits.

2.48 Ensuring the accurate collection of data on all of the visits taken on every day in the recall period was a priority at the questionnaire design stage and an area covered extensively in the interviewer briefings.

Communicating the survey scope

2.49 Reflecting the survey aims, the main focus of MENE is on time spent in the natural environment for leisure purposes. However, unlike previous surveys, MENE collects details of both visits to the natural environment such as on days out to the coast and countryside and more routine trips taken close to home for purposes such as dog walking or exercise - including those taken in urban green spaces. Whilst previous studies including the 2005 England Leisure Visits Survey are likely to have under-represented close to home visits to the natural environment, significant efforts have been made to ensure that MENE records the full spectrum of recreation in the natural environment undertaken by adults in England.

2.50 The outcomes of the aforementioned scoping study informed the wording of the introductory text used in MENE, as shown in Figure 2-1. The wording used aims to ensure that survey respondents are clear that participation in activities in both urban and rural locations are of interest and that there is no upper or lower time limit on the duration of the visit. Respondents are informed that routine shopping trips and time spent in the garden are not included in the definition of a visit. Interviewers are also provided with further guidance to provide to respondents who may be uncertain of what is and is not included within the definition of a visit.

Now I am going to ask you about occasions in the last week when you spent your time out of doors.

By out of doors we mean open spaces in and around towns and cities, including parks, canals and nature areas; the coast and beaches; and the countryside including farmland, woodland, hills and rivers.

This could be anything from a few minutes to all day. It may include time spent close to your home or workplace, further afield or while on holiday in England.

*However this **does not include**:*

Figure 2-1 Introduction to MENE interview

Interviewer briefings

2.51 It is particularly important that interviewers who undertake the MENE fieldwork are clear regarding key areas such as the definition of a visit and the level of detail to be recorded in questions regarding destinations visited, visit start points and visit expenditure.

2.52 Therefore, interviewer briefings have been undertaken by means of the following channels:

- Written instructions displayed to interviewers via their CAPI machine. These must be read prior to commencing every interviewing shift and can be referred to at any time during the interview.
- A video 'pod cast' provided on a DVD to all interviewers who work on the survey. This short training video communicates key points regarding the survey scope and the

importance of collecting the correct data regarding visit destinations and start points and expenditure.

- Annual presentations to regional fieldwork supervisors outlining the survey objectives and the importance of their interviewing teams following the instructions with a focus on the key areas mentioned above. Also, articles in the newsletter which is distributed to interviewers updating them on the survey progress, reinforcing the key areas to focus on in the interview.

2.53 Also, interviewers are periodically sent feedback forms inviting them to comment on the questionnaire design and any issues from both the interviewer's and respondent's perspectives.

Christmas gap

2.54 Fieldwork for the TNS in-home omnibus takes place from Friday to Tuesday every week with the exception of the Christmas period when no interviewing is undertaken. As MENE records details of visits taken during the seven days prior to interview, this gap in fieldwork coverage means that full data cannot be collected through the normal survey process for the preceding periods.

2.55 To address this gap additional interviewing has been undertaken during the omnibus waves immediately following Christmas. During these survey waves the half of the English sample not asked the normal MENE questions have been asked a similar series of questions regarding the visits they had taken in the period between 14 days and eight days prior to the interview date.

2.56 Questions identical to those normally asked regarding the previous seven days have been asked of this sample, the only difference being the period asked about and the addition of extra prompts to ensure that respondents were clear about the days being asked about. Given the aforementioned issues regarding poor recall of visits taken more than seven days prior to interview, additional efforts were made to ensure that respondents were prompted to recall the correct day and also given adequate time to consider their responses. The 'special' nature of the period being asked about was used with respondents given prompts such as 'this was the day before Christmas Day' to remind them of what they had done during each of the seven days within the survey period.

2.57 The results of these interviews were reviewed and have been integrated into the main monthly, quarterly and annual datasets.

3 Data analysis

3.12 This section of the report describes the approach followed to check, code and analyse the data following its collection. Areas covered include the coding of standard survey responses, geocoding, weighting and grossing procedures.

Data checking and coding of 'other' responses

3.13 The CAPI (Computer Assisted Personal Interviewing) approach allows for checks on the validity of the data to be incorporated into the script programming and conducted 'live' in the course of the interview. For MENE this includes a check at Question 1 where the interviewer is prompted to 'double check' if a respondent claims to have taken five or more natural environment visits in a single day.

3.14 While the MENE questionnaire does not include any fully open-ended questions, a number of questions provide an 'other' option which, if selected, requires the interviewer to record a response by handwriting this on their CAPI machine screen so that it can be digitally recorded. Following the interview, these responses are then reviewed and either 'back coded' to one of the existing answer options, if any are appropriate, or allocated a new code so that they can be included within the subsequent data analysis. This coding is undertaken for the 'other' responses to the following questions:

- Question 4 – Activities undertaken;
- Question 5 – Type of place visited (specific);
- Question 11 – Mode of transport used;
- Question 12 – Reasons for visit; and
- Question 18 – Barriers to visits during last 12 months.

Destination geocoding

3.15 Respondents are asked the following two questions about the location of the main destination of their visit. These questions are asked only of the single, randomly selected visit:

- Question 6 - "What is the name of the city, town or village or nearest city, town or village to the place you visited?"
- Question 7 - "Now please provide the name of the actual place you visited, for example the park, wood or canal."

3.16 At Question 6, a Gazetteer which contains the names of all of England's cities, towns and villages is used. Around 21,000 places are included in this Gazetteer. The interviewer selects the place named by the respondent from this list and it is then possible to analyse responses at a range of geographical levels including region, County or Local Authority. Following this approach, over the five years of fieldwork, 91,315 of the 93,770 visits recorded were 'allocated' to a city, town or village (97 per cent).

3.17 At Question 7, a place name Gazetteer containing details of places which could be the main destination of visits to the natural environment is used. This Gazetteer was compiled on the basis of a number of existing sources provided to TNS by Natural England including the Ordnance Survey 1:50,000 Scale Gazetteer, and listings of designated areas and other potential outdoor recreation sites including Open Access Land, woodland and allotments.

As well as place names, the Gazetteer contains location details in terms of six figure Eastings and Northings (using the Universal Transverse Mercator (UTM) coordinate system).

3.18 A total of 42,993 places are included in this Gazetteer, including over 7,000 woodland areas, around 6,000 water features (rivers, lakes, canals and other inland water), around 2,500 hills and mountains, over 2,000 Commons and over 250 Country Parks.

3.19 During the interview, the interviewers aim to initially find the name of the place visited from the Gazetteer. However, where the visit destination cannot be found or is not included in the Gazetteer, the interviewer records as many details as possible on the place visited (name, address and places close to destination such as shops, pubs, etc.) to facilitate the subsequent identification of the location after the interview, as discussed in the next section.

3.20 Where necessary, interviewers provide respondents with the following guidance to ensure that they are clear of how to respond and the appropriate details are recorded:

- *If the place does not have a name, provide a nearby street name or landmarks which would help us to find it on a map.*
- *If you were on a walk with no particular 'destination', tell us the location of the furthest away place reached.*
- *If you visited more than one place, provide the name of the place that was your final destination, for example, furthest away.*

3.21 Following each week of interviewing, the responses provided are reviewed and locations are identified and verified using a variety of sources including Internet search engines, online mapping websites and the place name gazetteer mentioned above. Once the location is verified using these sources, Eastings and Nothings are added to the survey data file.

3.22 By pursuing this detailed approach, over the five years of surveying it has been possible to apply destination grid references to 82 per cent of the 93,770 visits asked about to provide a data base of over 77,000 geocoded visits. The success rate has increased from 79 per cent of all visits receiving an accurate grid reference in year one to 86 per cent in year five.

3.23 In the remaining cases it has not been possible to obtain a destination geocode. This is usually due to a lack of sufficient information being provided by the respondent to allow the place to be identified with sufficient accuracy to allocate a geocode. As described in Section Two, continuous efforts are made to ensure that the level of detail collected from respondents and recorded by interviewers is sufficient to identify the visit destination for the purposes of geocoding. The overall 83 per cent of visits allocated a grid reference over the five years of surveying exceeds the targets agreed when MENE commenced.

Error checking

3.24 To ensure the accuracy of the destination geocodes the outputs of the above processes were profiled by Natural England to identify types of potential error:

- Grid references which are outside of England.
- Grid references which are offshore and so are unlikely to be the main visit destination.
- Grid references which have an identical Easting and Northing.
- Grid references in positions which have a markedly different distance from the start point than recorded as the distance travelled in the main survey (at Question 8).

3.25 These checks have been undertaken annually with potential errors flagged and checked. Where necessary data has then been corrected and further checks have been added at the data collection and coding stages to reduce the incidence of these types of error.

Start point geocoding

3.26 In addition to the identification of the position of visit destinations, efforts have been made to identify the location of visit start points.

3.27 For the majority of visits taken (95 per cent in Years One and Five, 91 per cent in Year Two and 94 per cent in Years Three and Four) the start point was the survey respondent's home. In the vast majority of these cases (86 per cent in Year One and 99 per cent in Years Two, Three, Four and Five), the full postcode included in the survey sample file has been used to identify the Easting and Northing of this point.

3.28 In Year Five, five per cent of visits started from a point other than the respondent's home (compared to five per cent in Year One, nine per cent in Year Two and six per cent in Years Three and Four). In these cases, the survey respondent was asked to specify the address and postcode of the start point or, if they did not know these details, to provide other information which could then be used to identify the address and an Easting and Northing for this point.

3.29 Following this approach it was possible to obtain a grid reference for 36 per cent of visit start points which were not the respondent's home in Year One, 24 per cent in Year Two, 56 per cent in Year Three, 30 per cent in Year Four and 47 per cent in Year Five. It was not possible to obtain a geocode for the remaining visits as insufficient information was provided by the respondent to allow for the point to be accurately identified. Recording more detailed information regarding start points other than home is a priority in the ongoing survey and a focus of interviewer briefings (see Section 2).

3.30 Therefore, in total, during the fifth year of interviewing, it has been possible to obtain a start point grid reference for 96 per cent of the visits recorded.

Weighting and grossing up of the survey data

3.31 This section provides details of the approaches taken to weight and gross up the MENE data. The outputs of this process are estimates of the total volume of visits taken to the natural environment by the English adult population and results representative of the adult population and the visits they have taken over the study period.

3.32 Reviews of these procedures were undertaken following the first six months of data collection and again after 12 months. The results of this review are provided later in this section.

Weighting and grossing procedures

A) Questions asked every week

3.33 Monthly data is based on the results of survey weeks which fell entirely or mainly within the reporting month. As such, monthly outputs for the five years of surveying were based on the following periods (week numbers shown are weeks of the year).

Table 3-1 Weeks included in each MENE month

Month	Year One March 2009 to February 2010 Calendar weeks	Year Two March 2010 to February 2011 Calendar weeks	Year Three March 2011 to February 2012 Calendar weeks	Year Four March 2012 to February 2013 Calendar weeks	Year Five March 2013 to February 2014 Calendar weeks
March	10-13	9-12	9-13	9-13	10-13
April	14-18	13-17	14-17	14-17	14-17
May	19-22	18-21	18-21	18-22	18-22
June	23-26	22-25	22-26	23-26	23-26
July	27-31	26-30	27-30	27-30	27-30
August	32-35	31-34	31-34	31-35	31-35
September	36-39	35-39	35-39	36-39	36-39
October	40-44	40-43	40-43	40-43	40-44
November	45-48	44-47	44-47	44-48	45-48
December*	49-53	48-52	48-52	49-52	49-52
January	1-4	1-4	1-4	1-5	1-5
February	5-8	5-8	5-8	6-9	6-9

* In December, no interviewing is undertaken on and around Christmas day so data collection for the last week of the year takes place in the following week. See Section 2 for specific details.

3.34 The steps followed to weight the results of questions included in every week of fieldwork are as follows:

1) Each month's data are weighted on the basis of age and sex (for example, males 16-24, females 85+), region of residence, social grade, presence of children in the household, sex and working status (for example, male full time), presence of a dog in the household and urban/rural residence.
2) The weighting targets used are representative of the English adult population and use the latest data available, updated each year (see Appendix 3 for details). The resultant Demographic Weight (DW) is used to weight respondent based data from questions asked every week (Question 1 and classification questions).
3) The total claimed number of trips is calculated for each respondent (TCT). That is the sum of the claimed trips in the seven days preceding the interview as recorded at Question 1.
4) The total number of trips with details given is calculated for each respondent (TDT). This is the sum of the trips taken in the seven days preceding the interview as recorded at Question 2 and Question 4. Each respondent can provide details of up to ten visits taken during the previous seven days.
5) The Trip Correction Factor (TCF) for each respondent is calculated as follows: TCF=TCT/TDT.
6) A Calendar Month Factor (CMF) is calculated as the total days in the reporting month divided by seven (i.e. the number of days for which visits have been collected for each respondent).

7) The Overall Trip Weight (OTW) is calculated for each respondent as the product of their Demographic Weight (DW), Trip Correction Factor (TCF) and Calendar Month Factor (CMF).
8) The estimate of the total number of visits taken in the month by the English adult population is the sum of each respondent's Overall Trip Weight. This weight is applied to visit based results which are collected for up to ten visits taken in the last seven days at Question 2 and Question 4.
9) A Randomly Selected Trip Weight is calculated for each respondent as the product of their Demographic Weight (DW), Total Claimed Trips (TCT) and the Calendar Month Factor (CMF). This weight is applied to visit based results which are collected for a single randomly selected visit from Question 5 to Question 12 (and Question 3 since April 2012).

B) Questions asked once a month and once a quarter

3.35 The steps followed to weight the results of questions which are included in one wave of fieldwork per month or one wave of fieldwork every three months are as follows:

1) Questions asked once a month and once a quarter are only included in quarterly tables with results based on the March to May, June to August, September to November and December to February periods.
2) For each of the quarterly periods, the combined three months' sample (for example, March, April and May) is weighted to the same demographic targets as the monthly data. This Quarterly Demographic Weight (QDW) is used to weight respondent based data from questions asked once a month or once a quarter.
3) A Quarter Factor (QF) is calculated as the number of days in the quarter divided by seven.
4) The Initial Quarterly Weights (IQW) to be applied to the monthly questions is then calculated for each respondent as the product of their Quarterly Demographic Weight (QDW), the Quarter Factor (QF) and their Total Claimed Trips (TCT).
5) An estimate of the total trips made in the quarter is calculated as a sum of the Initial Quarterly Weights. This sum will differ from the sum of the total trips in the quarter produced from the analysis of data collected every week (i.e. as described in bullet 8 above).
6) It is therefore necessary to calculate a Processing Correction (PC) as the estimate of trips taken in the quarter as estimated in the analysis of data collected every week divided by the estimate obtained in bullet 5 above.
7) The Final Quarterly Weight (FQW) for each individual is calculated as their IQW x PC. This weight is applied to visit based results which are collected on a monthly basis for a single randomly selected visit from Question 13 to Question 16 (and question 12 prior to April 2013).

3.36 In summary the following outputs are produced by undertaking the above weighting processes:

- **Estimates of the total volume of visits taken by the English adult population during each month** – this is the sum of every respondent's Overall Trip Weight which takes account of the volume of adults resident in England (through the Demographic Weight), the number of visits taken by each respondent in the previous seven days (Total Claimed Trips) and the number of days in the month (through the Calendar Month Factor). The monthly estimates of visits are added together to obtain estimates of visits for longer periods.
- **Results which relate to the English adult population such as percentages of the population taking visits at a certain level of frequency**. These 'respondent based' results are produced for Question 1 (number of visits in last 7 days), Question 17 (normal frequency of visits in last 12 months), Question 18 (reasons for not taking visits)

and all of the demographic classification questions. These results are obtained by applying the Demographic Weight.

- **Results which relate to visits taken by English adult population such as the percentages of all visits involving a certain activity or taken to a particular type of place**. These 'visit based' results are produced for Questions 2 and 4 for all of the visits taken by respondents (up to a maximum of ten per respondent) and for Questions 3 and 5 to 16 for questions asked about a single randomly selected visit. These results are obtained by applying the Overall Trip Weight to questions 2 and 4, Randomly Selected Trip Weight to questions 5 to 12 which are asked every week and Final Quarterly Weight to questions are asked monthly or quarterly.

3.37 The MENE Annual Reports include an estimate of total expenditure during visits to the natural environment. This estimate is obtained by multiplying the estimate of total visits taken by the mean expenditure per visit (i.e. as collected at question 15).

Results of weighting review

3.38 The purpose of weighting survey data is to ensure that outputs are representative of the population. In the case of MENE, the approaches outlined on the previous pages aim to ensure that the survey results are representative of the visits taken by the English adult population, in terms of volume and characteristics.

3.39 In designing the weighting approach for MENE, the demographic variables which were considered to be most closely related to levels and types of visit taking and those which were expected to be important reporting categories were selected. These consist of a combination of 'standard' demographic characteristics (such as age and sex) and other characteristics expected to be closely related to participation levels, such as having a dog in the home.

Review of demographics currently used in weighting

3.40 The table in Appendix 4 provides details of the unweighted number of visits reported by respondents during the first 12 months of interviewing and estimates of total visits following the application of weights. This review was undertaken following the first year of surveying using the data collected over this period and has not been repeated for the second year. Comparing the unweighted and weighted profiles of visits illustrates the following:

- The application of weighting inflates the visit estimates for men aged 16 to 64 (from 36 per cent of unweighted visits to 40 per cent with weighting), members of the ABC1 socio-economic group (from 51 per cent to 56 per cent) and men who work full time (from 23 per cent to 29 per cent).
- Conversely, the application of weighting deflates the visit estimates for women aged 65 and over (from 11 per cent to 8 per cent), those in the E socio-economic group (from 16 per cent to 10 per cent) and women who work part time or are not working (from 40 per cent to 35 per cent).

3.41 The above variations reflect varying response rates amongst these population groups, with those listed in the second bullet above more likely to be available for interview and therefore included in the survey. The demographic weighting corrects for these variations.

3.42 The next stage of the review involved an analysis of the average number of visits per adult amongst the groups which weighting is based upon. Across the population as a whole an estimated 68.7 visits were taken per adult during the first 12 months of interviewing.

3.43 As the table in Appendix 4 illustrates (see column furthest to right), there are significant differences in average levels of visit-taking across all of the categories used in the weighting except for children in household. One of the most notable differences relates to having a dog in the household.

3.44 Most of the differences confirm preconceptions, for example, smaller numbers of visits taken by residents of London and the elderly population.

3.45 These large differences in visit taking levels indicate that these characteristics are relevant variables to use in the MENE weighting. Therefore, our recommendation is for these characteristics to continue to be used in the weighting of future years' outputs.

Review of other demographics considered for weighting

3.46 A similar review was undertaken using the Year One data with a focus on a further two demographic characteristics which were considered as potential weighting factors but not applied - access to a car and having a long standing illness or disability.

3.47 While these characteristics were seen as potential weighting factors due to their likely influence on the ability to take visits, they were not used due to a lack of accurate and up to date population data (data on car access and long standing illness were collected in the Census in 2001 but it was felt that weighting to such out of date targets could produce a bias in the results).

3.48 As the table in Appendix 4 illustrates, unsurprisingly, more visits are taken by those with access to a car than those without and fewer trips are taken by those with a long term illness or disability than those in good health.

3.49 Twenty per cent of the sample during the first 12 months of interviewing had a long term illness or disability. This group represented 18 per cent of the weighted sample and made 16 per cent of the weighted visits. By comparison this group formed 21 per cent of the population at the time of the 2001 Census.

3.50 As we know that those aged over 65 years are over represented in the unweighted data and are more likely to have a limiting long term illness or disability, the reduction of this group following weighting by age is to be expected. The Census data is out of date by ten years now and therefore the percentage of the population with a limiting long term illness or disability may have changed. Also, as this is a self certification question, the perception amongst respondents of what constitutes a limiting long term illness or disability may well have changed since the Census.

3.51 Given the lack of up to date targets for weighting and the fact the percentage in the weighted sample has reduced as expected given the demographics of the unweighted sample, we would recommend not including this as a variable in the weighting.

3.52 In terms of car access, 68 per cent of the sample had access to a car. This group represented 70 per cent of the weighted sample and made 83 per cent of the weighted visits. By comparison the 2001 Census recorded 73 per cent of *households* as having access to a car - data for adults was not published. No more recent data is available.

3.53 Weighting to the 2001 Census data could be incorrect as car ownership levels will almost certainly have changed and would be different for individuals compared to household. Car ownership is linked to other demographics and the existing weighting using other demographics already increases the unweighted sample of those with car ownership from 68 per cent to 70 per cent.

3.54 Given the fact we do not have up to date information on car ownership, the fact that the Census data is at the household level and not at the individual level and as the differences in visit taking frequency between those with and without car access are smaller than for some other characteristics, we would recommend not including this as a variable in the weighting.

Conclusions of weighting review

3.55 The results of this review suggest that the demographics used in the weighting procedures are appropriate. In particular, the variations in frequency of visit taking on the basis of presence of a dog in the household demonstrate the importance of including this characteristic in the weighting.

3.56 We do not recommend any significant changes to the current procedures being followed but this approach will be kept under review.

4 Levels of accuracy

4.12 This section of the report provides details of the outputs of an analysis of Complex Standard Errors associated with the MENE data.

4.13 This analysis was undertaken annually following the first four years of data collection, most recently in relation to March 2012 to February 2013 period.

4.14 As the sampling methodology has remained the same since MENE commenced, this annual analysis of Complex Standard Errors has provided very similar results each year, showing consistency in the levels of accuracy of results. It was therefore agreed with Natural England that it was not necessary to continue to repeat this analysis on an annual basis. Instead, levels of accuracy for data collected in Year Five could be estimated by using the outcomes of the complex error analysis conducted for the previous years.

4.15 Normal confidence intervals and standard errors assume that the data has come from a Simple Random Sample (SRS). In such a sample, every individual in the population (for MENE, the English adult population) has an equal chance of being included in the survey sample.

4.16 In most surveys, however - including MENE - the sampling approach followed means that the survey sample is not a SRS. Complex Standard Errors (CSE) therefore take into account the extra information from the sampling design. Two sources of sample design are taken into account:

- Strata – showing homogenous groups, for example, gender, region.
- Clusters – points where the data was sampled from (if not an SRS).

4.17 The following estimates have been produced using a resampling method which resamples the original sample 1,000 times and then takes an average of all the estimates calculated in order to provide a more robust estimate of variance, taking account of the complex survey design.

Analysis of respondent-based data

4.18 Some of the MENE results are analysed and presented as proportions of the adult population in England. For example the percentages taking visits in the last 7 days or last 12 months. At an overall level these results are based on the full sample of 48,514 respondents in Year One, 46,099 respondents in Year Two, 47,418 respondents in Year Three, 46,749 respondents in Year Four and 46,785 respondents in Year Five.

4.19 Table 4-1 overleaf illustrates the design effect associated with the overall sample and the sub-samples obtained in each of the English regions during each of the first four years of surveying and for the total, cumulative sample over this period. The design effect is an indication of how much larger the sample variance is with the complex survey design used in MENE than it would be if the survey was based on the same sample size but selected randomly (i.e. a Simple Random Sample (SRS).

4.20 The table also includes the design factor which is an inflation factor for the standard errors obtained using a complex survey design. Over the first four years of MENE as a whole, the design factor at the all respondent level of 1.37 indicates that standard errors for these data are 1.37 times as large as they would have been had the design been an SRS.

4.21 The design factor is used to obtain the effective sample size which gives, for a complex survey design, an estimate of the sample size that would have been required to obtain the same level of precision in an SRS. The estimated effective sample size for respondent based results over the first four years of interviewing is 104,164 - 55 per cent of the actual achieved sample.

4.22 Applying the design factor of 1.37 to the 46,785 interviews conducted in Year Five of the survey suggests an effective sample size for this period of around 25,700.

Table 4-1 Levels of accuracy – respondent based results Year 1 to Year 4 and cumulative total

	Sample size (visits)					Design effect					Design factor					Effective sample size				
	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total
All respondents	48,514	46,099	47,418	46,749	188,780	1.79	1.62	1.84	2.05	1.87	1.34	1.27	1.35	1.43	1.37	27,100	28,458	25,769	22,837	104,164
By region																				
East Midlands	4,148	3,917	4,085	3,900	16,050	1.51	1.48	1.84	1.75	1.67	1.23	1.22	1.36	1.32	1.29	2,755	2,649	2,219	2,229	9,852
East of England	5,407	5,011	5,143	5,072	20,633	1.32	1.43	1.57	1.79	1.54	1.15	1.20	1.25	1.34	1.24	4,105	3,495	3,272	2,832	13,704
London	7,020	6,588	6,865	6,949	27,422	1.93	1.77	1.67	1.61	1.78	1.39	1.33	1.29	1.27	1.34	3,629	3,728	4,111	4,312	15,780
North East	2,452	2,374	2,472	2,421	9,719	1.38	1.30	1.29	1.49	1.38	1.18	1.14	1.14	1.22	1.18	1,771	1,820	1,909	1,620	7,120
North West	6,563	6,283	6,511	6,373	25,730	1.42	1.49	1.47	1.72	1.57	1.19	1.22	1.21	1.31	1.25	4,630	4,206	4,432	3,705	16,973
South East	8,036	7,606	7,764	7,751	31,157	1.43	1.53	1.75	1.80	1.66	1.20	1.24	1.32	1.34	1.29	5,612	4,983	4,446	4,299	19,340
South West	4,765	4,671	4,751	4,605	18,792	1.49	1.32	1.68	1.95	1.64	1.22	1.15	1.30	1.40	1.28	3,198	3,550	2,820	2,365	11,933
West Midlands	5,206	4,926	5,022	4,952	20,106	1.38	1.54	1.67	1.87	1.65	1.17	1.24	1.29	1.37	1.29	3,775	3,205	3,006	2,642	12,628
Yorkshire & the Humber	4,917	4,723	4,805	4,726	19,171	1.41	1.30	1.23	1.40	1.35	1.19	1.14	1.11	1.18	1.16	3,499	3,638	3,891	3,383	14,411

4.23 This design factor of 1.37 may be used to obtain an indication of the levels of accuracy of results obtained at a total sample level and for certain sub sets of the data. For example it can be estimated that with an SRS, a result of 50 per cent with the total Year Five sample of 46,785 would have a margin of error of +/-0.45 percentage points at the 95 per cent levels of confidence. Multiplying this value by 1.37 provides us with the margin of error when taking account of the MENE sample design i.e. +/-0.62 percentage points. This is equal to the margin of error that would be obtained for this result with a simple random sample of around 25,700. The design factors may be applied in a similar way to the results obtained for the sub samples obtained in each region.

4.24 Taking this approach the following margins of error may be estimated for certain key respondent based results from the fifth year of data collection:

- 42.2 per cent of the population had visited the natural environment in the last seven days. This result ranges from 41.6 per cent to 42.8 per cent.
- 57.6 per cent of the population stated that they normally visited the natural environment at least once a week. This result ranges from 56.3 per cent to 58.9 per cent.

4.25 It should be borne in mind that those questions which were included in the survey once a month (Q17 and Q18) and once a quarter (E2 to E6) have smaller sample sizes. A similar design factor is applicable to these sub-samples.

4.26 On the basis of the overall respondent based data design factor of 1.37, the following provides an indication of the general levels of accuracy of respondent based MENE results:

- Where the sample size is in excess of 40,000 respondents, the data will generally be accurate to around +/-0.6% at the 95% confidence level.
- When the sample size is around 10,000 respondents, the data will generally be accurate to around +/-1.3% at the 95% confidence level.
- Where the sample size is around 5,000 respondents, the data will generally be accurate to around +/-1.8% at the 95% confidence level.
- Where the sample size is around 1,000 respondents, the data will generally be accurate to around +/-4.1% at the 95% confidence level.

Analysis of visit-based data

4.27 Some of the MENE results are analysed and presented as proportions of the visits taken by the adult population in England. For example the percentages of the visits taken in the last week which involved time spent in the countryside. At an overall level some of these results are based on all of the visits for which key details were collected (e.g. a sample of 55,897 visits in Year Five, referred to as 'all visit' data) while other results are based on the randomly selected visits which more details were collected for (e.g. 18,808 visits in Year Five, referred to as 'selected visit' data).

4.28 Table 4-2 illustrates the design effects and design factors associated with the all visits data obtained from the overall sample of visits which were asked about. The total column relates to the averages across the first four years of data collection and can be taken as a good guide to the accuracy of data collected in Year Five.

4.29 The design factors relating to sub-samples of visits to different general types of place are also shown (as recorded at question two). These may be applied as outlined for the respondent based results. For example, across the first four years as a whole, with an SRS sample, a result of 50 per cent of visits taken to seaside coastline would be accurate to around +/-2.2 percentage points at the 95% levels of confidence. Applying the seaside coastline visits design factor of 1.26 provides the margin of error when taking account of the MENE sample design i.e. +/-2.8 percentage points.

Table 4-2 Levels of accuracy – all visit based results Year 1 to Year 4 and cumulative total

	Sample size (visits)					Design effect					Design factor					Effective sample size				
	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total
All visits	58,653	47,825	53,898	53,208	213,584	1.79	1.62	1.84	2.05	1.87	1.34	1.27	1.35	1.43	1.37	32,771	29,515	29,245	26,020	113,796
By general place visited																				
Town or city	24,328	18,304	21,324	23,880	87,836	1.74	1.74	1.66	1.76	1.70	1.32	1.32	1.29	1.33	1.30	13,990	10,550	12,567	13,500	49,656
Seaside resort or town	4,469	3,454	3,373	3,710	15,006	1.89	1.96	1.85	1.79	1.83	1.37	1.40	1.28	1.34	1.35	2,367	1,759	2,055	2,066	8,234
Seaside coastline	2,256	1,690	1,997	1,806	7,749	1.72	1.59	1.59	1.62	1.59	1.19	1.26	1.36	1.27	1.26	1,596	1,065	1,079	1,120	4,881
Countryside	27,600	24,377	27,204	23,812	102,993	1.79	1.99	1.85	1.98	1.89	1.34	1.41	1.33	1.41	1.38	15,425	12,250	15,221	11,977	54,082

4.30 On the basis of the four year average data design factor of 1.37, the following provides an indication of the general levels of accuracy of all visit based MENE results:

- When the sample size is around 50,000 visits, the data will generally be accurate to around +/-0.6% at the 95% confidence level.
- When the sample size is around 20,000 visits, the data will generally be accurate to around +/-0.9% at the 95% confidence level.
- When the sample size is around 10,000 visits, the data will generally be accurate to around +/-1.3% at the 95% confidence level.
- Where the sample size is around 5,000 visits, the data will generally be accurate to around +/-1.8% at the 95% confidence level.

4.31 Table 4-3 illustrates the design effects and design factors associated with the sample of selected visits and the sub-samples of visits taken to different specific types of place (as recorded at question five). Again the total column relates to the averages across the first four years of data collection and can be taken as a good guide to the accuracy of data collected in Year Five.

Table 4-3 Levels of accuracy – selected visit based results Years 1 to Year 4 and cumulative total

	Sample size (visits)					Design effect					Design factor					Effective sample size				
	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total	Yr.1	Yr.2	Yr.3	Yr.4	Total
All selected visits	20,374	17,389	19,014	18,185	74,962	1.79	1.62	1.84	2.05	1.87	1.34	1.27	1.35	1.43	1.37	11,347	10,781	10,433	8,893	39,939
By specific place visited																				
A playing field or other recreation area	1,206	1,066	1,267	1,115	4,654	1.11	1.16	1.14	1.23	1.16	1.05	1.08	1.07	1.11	1.08	1,108	911	1,112	905	4,025
Another open space in a town or city	1,362	1,099	1,347	1,499	5,307	1.17	1.20	1.29	1.24	1.23	1.08	1.10	1.14	1.11	1.11	1,110	802	1,039	1,217	4,307
Another open space in the countryside	1,830	1,609	1,769	1,557	6,765	1.48	1.38	1.82	1.54	1.56	1.22	1.17	1.35	1.24	1.25	1,540	1,331	973	1,013	4,349
Beach	1,541	1,341	1,371	1,348	5,601	1.44	1.33	1.37	1.38	1.39	1.20	1.15	1.17	1,17	1.18	916	1,013	1,003	985	4,023
Children's Playground	786	698	778	837	3,099	1.22	1.25	1.10	1.07	1.17	1.10	1.12	1.05	1.03	1.08	611	556	705	789	2,657
Country Park	1,710	1,473	1,578	1,503	4,654	1.21	1.21	1.27	1.21	1.23	1.10	1.10	1.13	1.10	1.11	1,302	1,195	1,239	1,242	3,777
Farmland	1,051	1,078	1,161	989	4,279	1.44	1.38	1.57	1.36	1.44	1.20	1.18	1.25	1.17	1.20	600	775	739	722	2,972
Mountain, hill or moorland	464	422	474	435	1,795	1.16	1.15	1.27	1.24	1.22	1.08	1.07	1.13	1.11	1.10	395	368	369	353	1,483
Park in town or city	5,532	4,827	5,376	5,251	20,986	1.50	1.36	1.38	1.45	1.44	1.22	1.17	1.18	1.21	1.20	3,184	3,585	3,892	3,587	1,4574
Path, cycleway or bridleways	1,981	1,784	2,196	2,109	8,070	1.40	1.56	1.52	1.55	1.53	1.18	1.25	1.23	1.25	1.23	1,306	1,140	1,444	1,350	5,334
River, lake or canal	1,718	1,483	1,743	1,518	6,492	1.35	1.42	1.37	,1.40	1.38	1.16	1.19	1.17	1.18	1.18	1,199	1,048	1,274	1,090	4,662
Village	1,202	1,023	1,171	955	4,351	1.38	1.63	1.69	1.48	1.54	1.18	1.28	1.30	1.22	1.24	817	625	693	642	2,830
Woodland or forest	1,747	1,777	1,875	1,695	7,094	1.28	1.29	1.40	1.42	1.36	1.13	1.14	1.18	1.19	1.16	1,308	1,365	1,342	1,197	5,272

Accuracy of visit estimates

4.32 An output of the weighting and grossing procedures used in MENE (see Section 3) is a series of estimates of the total number of visits taken by adults in England during each of the five years of surveying. Estimates are produced at various different levels including visits taken by residents of particular regions and visits taken to general and specific types of place.

4.33 Table 4-4 to Table 4-6 illustrates the upper and lower confidence limits associated with these estimates during the first four years of MENE. These estimates take account of two sources of variation: the uncertainty associated with respondent based results and the sample variation in terms of the number of visits respondents report to have taken in the 7 days prior to interview.

4.34 The regional estimates shown relate to visits taken by residents of each region rather than visits where the destination is within the region. The confidence limits associated with estimates of visits taken within destinations which are included in the annual results report are slightly wider than those shown.

4.35 The confidence intervals associated with the results collected in years one to four provide a good indication of the accuracy of Year Five results. For example applying the average confidence intervals relating to the all visits estimate of 2.92 billion suggests a lower confidence limit of 2.86 billion and upper limit of 3.00 billion.

4.36 Estimated confidence intervals for other key year five results include the following:

- Visits to green spaces in a town or city – estimate of 1.36 bn visits, ranging from 1.31 bn to 1.40 bn
- Visits to seaside resort of town – estimate of 0.17 bn visits, ranging from 0.16 bn to 0.19 bn
- Visits to seaside coastline – estimate of 0.09 bn visits, ranging from 0.08 bn to 0.10 bn
- Visits to countryside – estimate of 1.31 bn visits, ranging from 1.26 bn to 1.36 bn
- Visits to urban parks – estimate of 0.78 bn visits, ranging from 0.74 bn to 0.81 bn
- Visits to woodland or forestry – estimate of 0.38 bn visits, ranging from 0.35 bn to 0.41 bn

Table 4-4 Visit estimates – total, and by region of residence

	Year 1 March 2009 to February 2010			Year 2 March 2010 to February 2011			Year 3 March 2011 to February 2012			Year 4 March 2012 to February 2013		
	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits
All visits	**2,857,759**	**2,785,840**	**2,929,678**	**2,493,837**	**2,431,187**	**2,556,448**	**2,726,476**	**2,655,216**	**2,797,749**	**2,849,081**	**2,791,653**	**2,906,509**
By GOR of residence												
East Midlands	265,514	242,682	288,346	243,148	221,300	264,996	279,114	252,469	305,547	255,377	229,006	281,748
East of England	371,514	346,355	396,673	283,137	262,296	303,978	338,679	314,216	363,144	293,445	268,962	317,928
London	275,195	253,442	296,948	167,338	152,589	182,087	202,371	186,187	218,457	273,214	252,093	294,335
North East	157,498	138,605	176,391	170,322	150,707	189,937	195,278	174,608	215,751	188,035	166,762	209,308
North West	310,530	288,863	332,197	273,159	252,811	293,507	317,386	293,936	340,619	363,386	335,347	391,425
South East	530,961	502,335	559,587	425,203	398,298	452,114	413,969	385,580	442,093	432,617	401,699	463,535
South West	417,131	388,555	445,707	418,379	390,952	445,806	413,221	381,862	443,739	404,891	369,703	440,079
West Midlands	242,041	220,375	263,707	222,491	201,262	243,720	284,459	260,771	308,149	283,302	256,298	310,306
Yorkshire & the Humber	287,375	262,147	312,603	290,661	266,488	314,834	282,000	261,796	302,206	284,279	261,129	307,429

Table 4-5 Visit estimates – by general place visited

	Year 1 March 2009 to February 2010			Year 2 March 2010 to February 2011			Year 3 March 2011 to February 2012			Year 4 March 2012 to February 2013		
	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits
Town or city	1,157,932	1,113,597	1,200,945	923,060	887,798	958,322	1,048,624	1,009,654	1,087,598	1,218,141	1,182,142	1,254,140
Seaside resort or town	207,101	190,725	223,237	172,573	156,109	189,037	162,241	148,367	176,115	185,341	173,844	196,838
Seaside coastline	112,820	97,830	127,684	88,267	78,391	98,142	101,002	89,252	112,752	98,967	89,750	108,184
Countryside	1,379,905	1,325,345	1,432,896	1,309,938	1,257,351	1,362,525	1,414,610	1,357,302	1,471,925	1,346,632	1,303,947	1,389,317

Table 4-6 Visit estimates – by specific place visited

	Year 1 March 2009 to February 2010			Year 2 March 2010 to February 2011			Year 3 March 2011 to February 2012			Year 4 March 2012 to February 2013		
	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits
Playing field or other recreation area	195,411	168,693	222,129	190,962	173,106	208,818	228,865	209,810	247,921	206,731	186,869	226,593
Allotment or Community Garden	17,205	11,923	22,487	15,637	11,507	19,767	20,600	14,962	26,239	22,420	16,638	28,203
Another open space in a town or city	226,280	198,148	254,412	188,684	171,178	206,190	221,587	202,061	241,113	247,703	227,374	268,033
Another open space in the countryside	319,011	288,213	349,809	307,211	281,996	332,426	328,169	299,141	357,198	323,155	294,967	351,344
Beach	174,137	159,038	189,236	159,083	143,993	174,173	151,792	138,448	165,137	170,437	154,715	186,160
Children's Playground	82,157	73,116	91,198	75,804	65,791	85,818	80,171	71,052	89,291	85,516	77,084	93,948
Country Park	198,630	182,662	214,598	176,258	161,847	190,669	196,595	180,542	212,649	204,311	187,647	22,0946
Farmland	208,953	187,641	230,265	232,977	209,686	256,267	241,213	216,984	265,443	244,610	220,124	26,9097
Mountain, hill or moorland	61,126	53,172	69,080	63,938	54,689	73,188	76,343	64,823	87,864	73,009	62,170	83,844
Park in town or city	677,631	647,689	707,573	557,838	532,798	582,883	628,383	600,050	656,719	709,861	675,438	744,287
Path, cycleway or bridleways	369,187	341,782	396,592	359,534	330,312	388,755	430,117	399,777	460,458	448,256	414,988	481,525
River, lake or canal	253,373	230,815	275,931	231,907	210,907	252,908	261,436	241,053	281,821	251,803	230,389	273,217
Village	175,968	157,276	194,660	157,450	139,966	174,934	194,448	173,998	214,899	166,294	147,243	185,346
Woodland or forest	316,825	292,431	341,219	325,554	300,792	350,316	358,314	331,431	385,198	356,575	328,194	384,956

Accuracy of expenditure estimates

4.37 MENE also collects data on the amounts spent during visits to the natural environment. This data is then applied to estimates of the total volume of visits taken to obtain an estimate of the total amount spent on all visits taken over a 12 month period.

4.38 Table 4-7 below illustrates the confidence limits associated with these estimates during each of the first four years of the survey. The confidence intervals associated with these results provide a good indication of the accuracy of Year Five results.

4.39 By applying these confidence intervals to key Year Five expenditure results the following ranges may be estimated:

- Average spend per visit – excluding visits with no spend – estimate of £23.95 per visit, ranging from £20.12 to £27.78.
- Average spend per visit – including visits with no spend – estimate of £5.63 per visit, ranging from £4.73 to £6.53.
- Estimated total spend across all visits taken between March 2013 and February 2014 – estimate of £16.49 bn, ranging from £13.85 bn to £19.13 bn.

Table 4-7 Expenditure estimates

	Year 1 March 2009 to February 2010			Year 2 March 2010 to February 2011			Year 3 March 2011 to February 2012			Year 4 March 2012 to February 2013		
	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits	12 month visit estimate '000s visits	Lower confidence limit '000s visits	Upper confidence limit '000s visits
Average spend per visit (excluding visits with no spend)	£28.78	£24.48	£33.04	£29.69	£24.74	£34.81	£28.16	£23.65	£32.67	£27.23	£22.80	£31.66
Average spend per visit (including visits with no spend)	£7.14	£6.08	£8.20	£6.90	£5.75	£8.09	£7.46	£6.27	£8.65	£7.40	£6.20	£8.60
Estimated total spend all visits over 12 month period	£20.4 billion	£17.4 billion	£23.5 billion	£17.2 billion	£14.3 billion	£20.2 billion	£20.1 billion	£16.9 billion	£23.3 billion	£21.1 billion	£17.6 billion	£24.5 billion

Appendix 1 MENE questionnaire

Table A MENE questionnaire

	Asked of	Frequency	Notes
INTRODUCTION			
READ THE FOLLOWING TEXT IN FULL TO RESPONDENTS AND ENSURE THAT THEY UNDERSTAND. **SEE INSTRUCTIONS FOR FURTHER CLARIFICATION.** Now I am going to ask you about occasions in the last week when you spent your time out of doors. By out of doors we mean open spaces in and around towns and cities, including parks, canals and nature areas; the coast and beaches; and the countryside including farmland, woodland, hills and rivers. This could be anything from a few minutes to all day. It may include time spent close to your home or workplace, further afield or while on holiday in England. However this **does not include**: - routine shopping trips or; - time spent in your own garden.			Interviewer to check respondent is clear over definition. More detailed briefing note provided to interviewer.
7 DAY TRIP DIARY SECTION			
1) Firstly I would like to record details of occasions when you made out of door visits during each of the last 7 days. How many times, if at all, did you make this type of visit yesterday/on <DAY>? _____	ALL RESPONDENTS	WEEKLY – 51 WAVES	Set up so the number of visits taken on each of last 7 days, starting with yesterday, is asked separately, from most recent day to 7 days before interview.

	Asked of	Frequency	Notes
INSERT TEXT IF MORE THAN ONE VISIT IN DAY BEING ASKED ABOUT: So, thinking of the [first/second/third] of the visits you took on that day. 2) Which of the following best describes where you spent most of your time on this visit? **SHOW SCREEN. RANDOM ORDER. SINGLE CODE.** • In a town or city • In a seaside resort or town • Other seaside coastline (including beaches and cliffs) • In the countryside (including areas around towns and cities)	ALL VISIT TAKERS	WEEKLY – 51 WAVES	
3) How long did this visit last altogether – that is from the time you left to when you returned? **RECORD IN HOURS AND MINUTES** Hours _____ Minutes _____	ALL VISIT TAKERS	WEEKLY – 51 WAVES	UNTIL MARCH 2012 - QUESTION 3 WAS INCLUDED IN THIS POSITION AND ASKED OF ALL VISITS TAKEN (UP TO 10) IN LAST 7 DAYS.

	Asked of	Frequency	Notes
4) Which of these activities, if any, did you undertake? **SHOW SCREEN. RANDOM ORDER. CODE ALL MENTIONED.** • Eating or drinking out • Fieldsports (for example, shooting and hunting) • Fishing • Horse riding • Off-road cycling or mountain biking • Off-road driving or motorcycling • Picnicking • Playing with children • Road cycling • Running • Appreciating scenery from your car (for example, at a viewpoint) • Swimming outdoors • Visits to a beach, sunbathing or paddling in the sea • Visiting an attraction • Walking, not with a dog (including short walks, rambling and hill walking)? • Walking, with a dog (including short walks, rambling and hill walking)? • Watersports • Wildlife watching OPTIONS BELOW NOT RANDOMISED – ALWAYS AT END OF LIST: • Informal games and sport (for example, frisbee or golf) (SPECIFY) • Any other outdoor activities (for example, climbing) (SPECIFY)	ALL VISIT TAKERS	WEEKLY – 51 WAVES	
ABOVE QUESTIONS 2 TO 4 REPEATED FOR SECOND AND THIRD VISIT ON EACH DAY IF APPLICABLE. **QUESTION 1 THEN ASKED AGAIN FOR EACH DAY OF WEEK, WORKING BACKWARDS.** **QUESTION 1 ASKED FOR ALL 7 DAYS BUT QUESTIONS 2 TO 4 ASKED FOR A MAXIMUM OF 10 VISITS.**			
IF NO VISITS TAKEN IN ANY OF LAST 7 DAYS SKIP TO Q17			
MORE DETAIL ON SINGLE RANDOMLY SELECTED VISIT SECTION			

	Asked of	Frequency	Notes
I would now like to ask you some further questions about the [first/second/third] visit to the out of doors you took Yesterday/ on <DAY>. This visit was to [location from Q2] and involved [activities from Q4].			Script set up so that one of the visits taken in last 7 days is randomly selected and asked about in Q5 to Q16
3) How long did this visit last altogether – that is from the time you left to when you returned? **RECORD IN HOURS AND MINUTES** Hours _____ Minutes _____	ALL VISIT TAKERS	WEEKLY – 51 WAVES	FROM APRIL 2013 - QUESTION 3 WAS INCLUDED IN THIS POSITION AND ASKED ABOUT SINGLE RANDOMLY SELECTED VISIT ONLY.
5) Which of the following list of types of place best describe where you spent your time during this visit? Select more than one if necessary. **SHOW SCREEN. RANDOM ORDER. CODE ALL MENTIONED.** • A woodland or forest (including community woodland) • Farmland • A mountain, hill or moorland • A river, lake or canal • A village • A path, cycleway or bridleway • Country park • Another open space in the countryside --- KEEP TOGETHER IN THIS ORDER: • A park in a town or city • An allotment or community garden • A children's playground • A playing field or other recreation area • Another open space in a town or city --- KEEP TOGETHER IN THIS ORDER: • A beach • Other coastline --- ALWAYS AT END: • Other (specify)	ALL VISIT TAKERS	WEEKLY – 51 WAVES	

	Asked of	Frequency	Notes
6) What is the name of the city, town or village or nearest city, town or village to the place you visited? FOLLOW UP IF NECESSARY: This may be the place you live in. If you visited more than one city, town or village provide the name of the place nearest your final destination. NAME OF (NEAREST) TOWN OR VILLAGE: (USES LIST OF TOWNS AND VILLAGES AS IN UKTS SURVEY – INCLUDES SCOTTISH AND WELSH PLACES TO ALLOW FOR CROSS BORDER TRIPS)	ALL VISIT TAKERS	WEEKLY – 51 WAVES	towns and cities Gazetteer used for part a) of question Interviewer briefed to clarify 'final destination'. Respondents to self select - this is likely to be the place most time spent in and/or furthest away from start point.
7) Now please provide the name of the actual place you visited, for example the park, wood or canal. ADD AS NECESSARY, IMPORTANT!: • If the place does not have a name, provide a nearby street name or landmarks which would help us to find it on a map. • If you were on a walk with no particular 'destination', tell us the location of the furthest away place reached. • If you visited more than one place, provide the name of the place that was you final destination, for example, furthest away. PLACE VISITED (IF JUST TOWN OR VILLAGE NAME GIVEN PROBE FOR MORE DETAIL). **INTERVIER NOTE: IF RESPONDENT DOES NOT KNOW NAME OF PLACE VISITED PROBE FOR AS MUCH DETAIL AS POSSIBLE TO ALLOW US TO IDENTIFY THE LOCATION AFTER INTERVIEW, FOR EXAMPLE, ADDRESS, STREET NAME, NEARBY LANDMARKS, ETC. – THE MORE DETAIL THE BETTER!**	ALL VISIT TAKERS	WEEKLY – 51 WAVES	Places Gazetteer of visit destinations used. Interviewers briefed to clarify 'final destination' and to probe for as much detail as possible.

	Asked of	Frequency	Notes
8) Approximately how far, in miles, did you travel to reach this place? By that I mean the one way distance from where you set off to the place visited. **SHOW SCREEN. DO NOT RANDOMISE. SINGLE CODE.** Less than 1 mile 1 or 2 miles 3 to 5 miles 6 to 10 miles 11 to 20 miles 21to 40 miles 41to 60 miles 51to 80 miles 81to100 miles More than 100 miles	ALL VISIT TAKERS	WEEKLY – 51 WAVES	
9) And did this journey start from… **SHOW SCREEN. DO NOT RANDOMISE. SINGLE CODE.** • Your home • Someone else's home • Work • Holiday accommodation • Somewhere else	ALL VISIT TAKERS	WEEKLY – 51 WAVES	
IF JOURNEY DID NOT START FROM RESPONDENT'S HOME: 10) Please provide the address of where your journey started from? INTERVIER NOTE: IDEALLY COLLECT POSTCODE (FOR EXAMPLE, FOR WORKPLACES). IF THIS IS NOT POSSIBLE ASK FOR AS MUCH DETAIL AS POSSIBLE ON ADDRESS FOR EXAMPLE, NAME OF HOTEL AND TOWN.	ALL VISIT TAKERS	WEEKLY – 51 WAVES	

	Asked of	Frequency	Notes
11) What form of transport did you use on this journey? INTERVIEWER NOTE: IF MORE THAN ONE FORM OF TRANSPORT USED RECORD THAT USED FOR LONGEST DISTANCE. **SHOW SCREEN. RANDOM ORDER. SINGLE CODE.** • Car or van • Train (includes tube/underground) • Public bus or coach (scheduled service) • Coach trip/ private coach • Motorcycle/ scooter • Bicycle/ mountain bike • On foot/ walking • Wheelchair/mobility scooter • On horseback • Boat (sail or motor) • Taxi ALWAYS AT END: • Other	ALL VISIT TAKERS	WEEKLY – 51 WAVES	
12) Which of the following, if any, best describe your reasons for this visit? Select all of those which apply to you. **SHOW SCREEN. RANDOM ORDER. CODE ALL MENTIONED.** • To spend time with family • To spend time with friends • To learn something about the outdoors • For fresh air or to enjoy pleasant weather • For health or exercise • For peace and quiet • To relax and unwind • To exercise your dog • To enjoy scenery • To enjoy wildlife • To entertain children • To challenge yourself or achieve something • To be somewhere you like • For other reasons (SPECIFY)	ALL VISIT TAKERS	UNTIL MARCH 2012 MONTHLY - 12 WAVES – EACH IN LAST WEEK OF MONTH FROM APRIL 2013 WEEKLY – 51 WAVES	

	Asked of	Frequency	Notes
13) On this visit… a) how many adults aged 16 or over, including yourself, were on this visit? _____ ZERO NOT ALLOWED AS INCLUDES RESPONDENT b) how many children aged under 16 were on this visit? ____ MAY BE ZERO	ALL VISIT TAKERS	MONTHLY - 12 WAVES – EACH IN LAST WEEK OF MONTH	
14) Were you accompanied by a dog on this visit? • Yes • No	ALL VISIT TAKERS	MONTHLY - 12 WAVES – EACH IN LAST WEEK OF MONTH	
15) During this visit , did you personally spend any money on any of the items listed on the screen? PROBE Any others? **SHOW SCREEN. RANDOM ORDER. CODE ALL MENTIONED.** • Food and drink • Petrol\diesel\LPG • Car parking • Bus\train\ferry fares • Hire of equipment • Purchase of equipment • Maps\guidebooks\leaflets • Gifts\souvenirs • Admission fees • Other items • Didn't spend any money	ALL VISIT TAKERS	MONTHLY - 12 WAVES – EACH IN LAST WEEK OF MONTH	
16) How much did you spend on… ASKED FOR THOSE SELECTED AT Q17 Food and drink ____ Petrol\diesel\LPG____ Car parking____ Bus\train\ferry fares____ Hire of equipment____ Purchase of equipment____ Maps\guidebooks\leaflets____ Gifts\souvenirs____ Admission fees____ Other items____	ALL VISIT TAKERS	MONTHLY - 12 WAVES – EACH IN LAST WEEK OF MONTH	

	Asked of	Frequency	Notes
E1) And still thinking of this visit, how much do you agree or disagree with the following statements? **SHOW SCREEN. SINGLE CODE** …I enjoyed it …It made me feel calm and relaxed …It made me feel refreshed and revitalised …I took time to appreciate my surroundings …I learned something new about the natural world …I felt close to nature • Strongly agree • Agree • Neither agree nor disagree • Disagree • Strongly disagree	ALL VISIT TAKERS	QUARTERLY - 4 WAVES – LAST WEEK OF FEBRUARY, MAY, AUGUST, NOVEMBER	
LAST 12 MONTHS SECTION			
17) Now thinking about the last 12 months, how often, on average, have you spent your leisure time out of doors, away from your home? Again, by out of doors we mean open spaces in and around towns and cities, the coast and the countryside. This could be anything from a few minutes to all day. It may include time spent close to your home, further afield or while on holiday in England. However this **does not include** routine shopping trips or time spent in your own garden. **SHOW SCREEN. SINGLE CODE.** • More than once per day • Every day • Several times a week • Once a week • Once or twice a month ---------- • Once every 2-3 months • Once or twice • Never	ALL RESPONDENTS	MONTHLY - 12 WAVES – EACH IN LAST WEEK OF MONTH	

	Asked of	Frequency	Notes
18) IF ONCE EVERY 2-3 OR ONCE OR TWICE AT Q17: Why have you not spent more of your time out of doors? IF NEVER AT Q17: Why have you not spent any of your time out of doors? **DO NOT PROMPT - PROBE FULLY. SELECT ALL THAT APPLY. DO NOT RANDOMISE – KEEP IN GROUPINGS SHOWN BELOW.** Bad\poor weather Old age Poor health A physical disability Pregnant Have young children Have other caring responsibilities Too busy at home Too busy at work Not interested This isn't something for me/people like me Don't like going on my own No access to a car Lack of public transport Too expensive Prefer to do other leisure activities Worried about safety/ doesn't feel safe Concerns about where allowed to go/restrictions I don't feel welcome/feel out of place Lack of suitable places to go/suitable paths Don't know where to go/lack of information Other (SPECIFY) No particular reason	THOSE WHO HAVE TAKEN VISITS ONCE EVERY 2-3 MONTHS, ONCE OR TWICE OR NEVER IN LAST 12 MONTHS	MONTHLY - 12 WAVES – EACH IN LAST WEEK OF MONTH	
The following questions are about you and how you enjoy the natural environment. By natural environment we mean green open spaces in towns and cities as well as the coast and countryside.	ALL RESPONDENTS	QUARTERLY - 4 WAVES – LAST WEEK OF FEBRUARY, MAY, AUGUST, NOVEMBER	

	Asked of	Frequency	Notes
E2) How much do you agree or disagree with the following statements? **SHOW SCREEN. SINGLE CODE** …Spending time out of doors (including my own garden) is an important part of my life …I am concerned about damage to the natural environment …There are many natural places I may never visit but I am glad they exist …Having open green spaces close to where I live is important • Strongly agree • Agree • Neither agree nor disagree • Disagree • Strongly disagree	ALL RESPONDENTS	QUARTERLY - 4 WAVES – LAST WEEK OF FEBRUARY, MAY, AUGUST, NOVEMBER	
E3) Which of the following activities involving the natural environment do you take part in? Please choose everything you do, both regularly and occasionally. **SHOW SCREEN. RANDOM ORDER. CODE ALL MENTIONED** • Watching or listening to nature programmes on the TV or radio • Looking at books, photos or websites about the natural world • Looking at natural scenery from indoors or whilst on journeys • Sitting or relaxing in a garden • Gardening • Watching wildlife (including bird watching) • Choosing to walk through local parks or green spaces on my way to other places • Doing unpaid voluntary work out of doors • None of these (fix at bottom)	ALL RESPONDENTS	QUARTERLY - 4 WAVES – LAST WEEK OF FEBRUARY, MAY, AUGUST, NOVEMBER	

	Asked of	Frequency	Notes
E4) Thinking about the last 12 months, which of the following environment-related activities did you do? Please choose all that apply. **SHOW SCREEN. RANDOM ORDER. CODE ALL MENTIONED** • I usually recycle items rather than throw them away • I usually buy eco-friendly products and brands • I usually buy seasonal or locally grown food • I choose to walk or cycle instead of using my car when I can • I encourage other people to protect the environment • I am a member of an environmental or conservation organisation • I volunteer to help care for the environment • I donate money at least once every three months to support an environmental or conservation organisation • I donate my time at least once every three months to an environmental or conservation organisation • I have signed a conservation petition or participated in an online\other conservation campaign • None of these (fix at bottom)	ALL RESPONDENTS	QUARTERLY - 4 WAVES – LAST WEEK OF FEBRUARY, MAY, AUGUST, NOVEMBER	

	Asked of	Frequency	Notes
E5) Please think about whether or not you are likely to make changes to your lifestyle to protect the environment, for example by recycling rather than throwing things away, using your car less and buying local food. Which of these statements best describes your intentions? **SHOW SCREEN. SINGLE CODE** • I like my lifestyle the way it is and am not likely to change it • I'd like to make changes to my lifestyle but I don't know what to do • I'd like to make changes to my lifestyle but it's too difficult • I'd make changes to my lifestyle if I knew other people were willing to make changes • I intend to make changes to my lifestyle • I already do a lot to protect the environment so it would be difficult to do more • Don't know (fix at bottom)	ALL RESPONDENTS	QUARTERLY - 4 WAVES – LAST WEEK OF FEBRUARY, MAY, AUGUST, NOVEMBER	
CLASSIFICATION QUESTIONS			
19) Do you own or have access to a car? Yes No	ALL RESPONDENTS	WEEKLY – 51 WAVES	
20) Do you have a dog? Yes No	ALL RESPONDENTS	WEEKLY – 51 WAVES	
21) In the past week, on how many days have you done a total of 30 minutes or more of physical activity, which was enough to raise your breathing rate? *This may include sport, exercise, and brisk walking or cycling for recreation or to get to and from places, but should not include housework or physical activity that may be part of your job.* TYPE IN NUMBER BETWEEN O AND 7	ALL RESPONDENTS	WEEKLY – 51 WAVES	
22) Do you have any long standing illness, health problem or disability that limits your daily activities or the kind of work you can do? Yes No	ALL RESPONDENTS	WEEKLY – 51 WAVES	

Appendix 2 Standard classification questions included in TNS Omnibus

Question 1

Sex of respondent ?

1 · MALE
2 · FEMALE

Question 2a

What was your age last birthday ?

Question 2b

INTERVIEWER - ESTIMATE AGE GROUP OF RESPONDENT
Age of respondent

1 · 16-17
2 · 18-24
3 · 25-34
4 · 35-44
5 · 45-54
6 · 55-64
7 · 65-74
8 · 75+

Question 3

Thinking about your household's food and grocery shopping, are you personally responsible for selecting HALF OR MORE of the items to be bought from supermarkets and food shops ?

1 · YES - HALF OR MORE
2 · NO - LESS THAN HALF

Question 4

Do you have any children under 16 ?

1 · YES
2 · NO

Question 5

Working status ?

1 · FULL-TIME PAID WORK (30+ HOURS PER WEEK)
2 · PART-TIME PAID WORK (8-29 HOURS PER WEEK)
3 · PART-TIME PAID WORK (UNDER 8 HOURS PER WEEK)
4 · RETIRED
5 · STILL AT SCHOOL
6 · IN FULL TIME HIGHER EDUCATION
7 · UNEMPLOYED (SEEKING WORK)
8 · NOT IN PAID EMPLOYMENT (NOT SEEKING WORK)

Question 6

SHOW SCREEN - MULTI CHOICE
Through which of the following ways, if any, do you receive television in your household?
Please think about all the TV sets in your household.

1 · Digital Satellite TV through Sky for a monthly subscription (i.e. satellite dish)
2 · Free-Sat TV through any satellite dish WITHOUT a monthly subscription
3 · Cable through Virgin Media (previously ntl\Telewest)
4 · Freeview TV through TV aerial and set-top box without a monthly subscription
5 · Top-Up TV through TV aerial and set-top box for a monthly subscription
6 · TV which has Freeview channels built in (IDTV using TV aerial, without a separate set-top box)
7 · TV from Tiscali\Homechoice
8 · TV from BT Vision
9 · TV through a normal aerial but receiving the main 4 or 5 channels only
10 · Other

Question 7

SHOW SCREEN - MULTI CHOICE
Q.1 Do you have any of the following ?
INTERNET ACCESS E-MAIL

1 · Access to the Internet at home on a computer\laptop
2 · Access to the Internet at work on a computer\laptop
3 · An e-mail address at home
4 · An e-mail address at work
6 · Access to the Internet via a mobile phone
7 · Other Internet access
8 · Other e-mail address
11 · Access to the Internet at school\college\university on a computer
12 · Access to the Internet at home on a games console
13 · Internet at home through your TV screen via a computer
14 · Internet access from a library on a computer
15 · Internet access in a café\bar on a computer
18 · Access to the Internet on a Palmtop or Personal Digital Assistant (PDA)\Pocket PC
19 · Internet access at a friends or relatives house on a computer

Question 8

Marital status of respondent

1 · MARRIED\LIVING AS MARRIED
2 · SINGLE
3 · WIDOWED\DIVORCED\SEPARATED

Question 9

ENTER YOUR RESPONSE USING THE PAD ON SCREEN
How many people are there in your household altogether,
including any children and yourself ?

And how many children under the age of 16 are there in
the household ?

Question 10

COLLECT SEX AND AGE OF CHILDREN STARTING WITH THE ELDEST

Question 11

SHOW SCREEN - MULTICHOICE
Which, if any, of the following apply to you ?

1 · A. I am currently up to 3 months pregnant
2 · B. I am currently 4-6 months pregnant
3 · C. I am currently 7-9 months pregnant
4 · D. My partner is currently up to 3 months pregnant
5 · E. My partner is currently 4-6 months pregnant
6 · F. My partner is currently 7-9 months pregnant
7 · G. I have a baby aged 0-3 months
8 · H. I have a baby aged 4-6 months
9 · I. I have a baby aged 7-12 months

Question 12

Tenure

1 · OWN OUTRIGHT
2 · OWN WITH A MORTGAGE
3 · RENT FROM COUNCIL
4 · RENT PRIVATELY
5 · OTHER

Question 13

SHOW SCREEN
Which of these best describes your ethnic group ?
(IF NECESSARY: By this I mean your cultural background)

1 · White British
2 · White Irish
3 · Any other white background
4 · White & Black Caribbean
5 · White & Black African
6 · White & Asian
7 · Any other mixed background
8 · Indian
9 · Pakistani
10 · Bangladeshi
11 · Any other Asian background
12 · Caribbean
13 · African
14 · Any other Black background
15 · Chinese
16 · Any other

Question 14

Working status of Chief Income Earner (CIE)

1 · EMPLOYED
2 · SELF-EMPLOYED
4 · NOT WORKING, DEPENDENT ON STATE BENEFIT
5 · NOT WORKING, OTHER INCOME

Question 15

Social grade

1 ▪ . A .
2 ▪ . B .
3 ▪ . C1 .
4 ▪ . C2 .
5 ▪ . D .
6 ▪ . E .

Appendix 3 Weighting targets

Table B Weighting targets

Weighting target	Year One March 2009 - February 2010 '000s	Year Two March 2010 - February 2011 '000s	Year Three March 2011 - February 2012 '000s	Year Four March 2012 - February 2013 '000s	Year Five March 2013 - February 2014 '000s
Age x Sex					
Male 16-24	2,941	3,041	3,066	3,130	3,116
Male 25-34	3,324	3,393	3,421	3,634	3,631
Male 35-44	3,954	3,849	3,881	3,524	3,508
Male 45-54	3,345	3,437	3,465	3,599	3,607
Male 55-64	3,025	3,008	3,033	2,885	2,902
Male 65-74	2,044	2,006	2,022	2,207	2,259
Male 75-84	1,191	1,258	1,268	1,384	1,293
Male 85+	308	350	353	385	422
Female 16-24	2,853	2,932	2,956	2,942	2,959
Female 25-34	3,357	3,420	3,449	3,586	3,477
Female 35-44	4,025	3,903	3,934	3,543	3,528
Female 45-54	3,413	3,509	3,538	3,668	3,685
Female 55-64	3,138	3,128	3,154	3,004	3,019
Female 65-74	2,233	2,179	2,197	2,385	2,462
Female 75-84	1,652	1,673	1,686	1,830	1,654
Female 85+	570	633	638	692	819
Total	**41,373**	**41,719**	**42,061**	**42,400**	**42,341**
Region					
East Midlands	3,551	3,612	3,641	3,726	3,672
East of	4,528	4,620	4,658	4,748	4,684
London	6,183	6,192	6,243	6,250	6,505
North East	2,098	2,095	2,113	2,102	2,106
North West	5,602	5,613	5,659	5,630	5,604
South East	6,690	6,724	6,779	6,830	6,820
South West	4,220	4,255	4,290	4,372	4,281
West Midlands	4,358	4,368	4,404	4,394	4,416
Yorkshire and	4,143	4,240	4,274	4,348	4,253
Social Grade					
AB	9,162	9,959	10,041	10,765	10,750

Weighting target	Year One March 2009 - February 2010 '000s	Year Two March 2010 - February 2011 '000s	Year Three March 2011 - February 2012 '000s	Year Four March 2012 - February 2013 '000s	Year Five March 2013 - February 2014 '000s
C1	11,716	11,998	12,097	12,171	12,154
C2	8,460	8,603	8,673	8,961	8,949
D	6,796	6,260	6,311	6,381	6,379
E	5,239	4,899	4,939	4,115	4,109
Children in Household					
Yes	29,413	29,826	30,071	30,313	30,271
No	11,960	11,893	11,990	12,078	12,070
Working					
Male Full Time	12,214	12,379	12,481	11,890	11,884
Male Part Time	688	721	727	1,023	965
Male Not	7,230	7,242	7,301	7,836	7,890
Female Full	6,747	7,168	7,227	6,972	6,956
Female Part	3,690	3,463	3,491	4,110	3,903
Female Not	10,804	10,746	10,834	10,569	10,743
Dog					
Yes	31,766	32,032	32,295	32,555	32,510
No	9,607	9,687	9,766	9,845	9,831
Urban/Rural					
Urban	33,415	33,695	33,971	34,602	34,197
Rural	7,958	8,024	8,090	7,798	8,144
Total	**41,373**	**41,719**	**42,061**	**42,400**	**42,341**

Appendix 4 Review of demographics used in weighting

Table C Review of demographics used in weighting – March 2009 to February 2010 targets

	Population	Visits				
	'000s	Unweighted	Weighted '000s	Unweighted %	Weighted %	Visits per adult
TOTAL	**413,73**	**273,452**	**2,843,169**	**100%**	**100%**	**68.7**
Age x Gender						
Male 16-24	2,941	146,61	161,953	5%	6%	**55.1**
Male 25-34	3,324	159,05	186,053	6%	7%	**56.0**
Male 35-44	3,954	213,40	276,660	8%	10%	**70.0**
Male 45-54	3,345	234,50	261,273	9%	9%	**78.1**
Male 55-64	3,025	223,03	243,057	8%	9%	**80.3**
Male 65-74	2,044	197,90	170,354	7%	6%	**83.3**
Male 75-84	1,191	8,263	62,290	3%	2%	**52.3**
Male 85+	308	812	7,895	0%	0%	**25.6**
Female 16-24	2,853	13,410	151,338	5%	5%	**53.0**
Female 25-34	3,357	217,28	219,767	8%	8%	**65.5**
Female 35-44	4,025	30,676	332,841	11%	12%	**82.7**
Female 45-54	3,413	25,732	277,627	9%	10%	**81.3**
Female 55-64	3,138	26,147	258,491	10%	9%	**82.4**
Female 65-74	2,233	19,979	155,803	7%	5%	**69.8**
Female 75-84	1,652	8,420	69,257	3%	2%	**41.9**
Female 85+	570	836	8,510	0%	0%	**14.9**
GOR						
East Midlands	3,551	25,232	263,162	9%	9%	**74.1**
East of England	4,528	36,801	369,851	13%	13%	**81.7**
London	6,183	25,771	273,246	9%	10%	**44.2**
North East	2,098	14,979	158,680	5%	6%	**75.6**
North West	5,602	29,091	312,709	11%	11%	**55.8**
South East	6,690	52,742	512,479	19%	18%	**76.6**
South West	4,220	38,388	412,582	14%	15%	**97.8**
West Midlands	4,358	23,063	240,311	8%	8%	**55.1**
Yorkshire and the Humber	4,143	27,391	285,734	10%	10%	**69.0**

Table continued...

Social Grade

	Population	Visits				
	'000s	Unweighted	Weighted '000s	Unweighted %	Weighted %	Visits per adult
AB	9,162	61,847	766,085	23%	27%	**83.6**
C1	11,716	767,32	823,489	28%	29%	**70.3**
C2	8,460	56,279	567,323	21%	20%	**67.1**
D	6,796	35,271	408,904	13%	14%	**60.2**
E	5,239	43,332	277,391	16%	10%	**52.9**
Children in Household						
Yes	11,960	83,105	836,777	30%	29%	**70.0**
No	29,413	190,354	2,006,419	70%	71%	**68.2**
Working Status						
Male Full Time	12,214	62,149	811,255	23%	29%	**66.4**
Male Part Time	688	6,222	44,998	2%	2%	**65.4**
Male Non Working	7,230	58,157	513,314	21%	18%	**71.0**
Female Full Time	6,747	37,599	490,768	14%	17%	**72.7**
Female Part Time	3,690	31,036	304,328	11%	11%	**82.5**
Female Not Working	10,804	78,323	678,536	29%	24%	**62.8**
Dog in Household						
Yes	9,607	143,762	1,511,580	53%	53%	**157.3**
No	31,766	129,697	1,331,617	47%	47%	**41.9**
Urban/Rural						
Urban	33,415	202,774	2,123,517	74%	75%	**63.5**
Rural	7,958	70,686	719,683	26%	25%	**90.4**
Access to a Car						
Yes	30,957	221,386	2,364,810	81%	83%	**76.4**
No	10,416	52,072	478,388	19%	17%	**45.9**
Long Standing Illness						
Yes	7,626	49,288	446,844	18%	16%	**58.6**
No	33,747	224,173	2,396,352	82%	84%	**71.0**

Appendix 5 – What the expenditure data tells us

This note describes what the MENE expenditure data tell us in principle. A summary (with illustrations) is included in the MENE Annual Report from the 2013-14 survey; further detail is provided here. The note applies to data collected in previous years as well as this year. It has been provided to inform applications of the data and to address issues that have arisen in the past.

The data on expenditure currently collected by MENE tells us the amount of money that people spend during a trip that includes a visit to the natural environment. This is different to the expense that people incur in making the visit (which is not specifically collected by MENE). Some of the expense that is incurred (such as food, fuel and public transport) may be met through purchases made before the trip. During the trip people may spend money on goods such as equipment, food and fuel that they use or consume after the visit. It is likely that expenditure during the trip on car parking, admission fees and gifts and souvenirs is incurred as part of the trip. For other items, MENE does not collect all the data needed to estimate expense incurred in making the trip. Such data would be subject to higher errors than the data collected by MENE as they would be estimates made by survey respondents.

Information collected by MENE on expenditure on different categories of goods may be of interest to businesses and public authorities. However, it is important to remember that the MENE data does not tell us where people spend money on many of the items. For example, people may purchase food and fuel close to where they set off from, on the way or at the place that they visit. For some items, such as car parking and entrance fees, it could be assumed that expenditure takes place at the site that is visited. For visits that are in the same region as where people set off from, expenditure is likely to be within that region. However, this is not necessarily the case; they may have travelled through and spent money in other regions as part of the overall trip.

People may undertake their visit to the natural environment as part of a trip that includes other activities such as having a pub lunch or going to a shop. Additional information is needed if we are to attribute expenditure specifically to visits to the natural environment. We would need to know whether the trip included other activities, and if it did, we would need to know how much of the expenditure is attributed specifically to visiting the natural environment. Survey respondents can be asked to undertake such estimates, though these will be subject to uncertainty. It is an important adjustment to make though. For example, if the main purpose of a trip was to visit a relative but the excursion included walking the dog nearby, the majority of the transport costs would be attributable to the visit to the relative, not going for a walk.

How can we estimate the economic impacts of expenditure made as part of visits to the natural environment?

Recreational expenditure has potential to increase a regional economy's income. Unfortunately, the MENE expenditure data is not sufficient to assess the impact of expenditure incurred in making visits to the natural environment on a region's economy. This is because we do not know:

- where the expenditure took place;
- how much of the expenditure can be attributed to visits to the natural environment as opposed to other visits that were undertaken as part of a trip.

To assess the economic impact of recreational expenditure in a region, not only are data on recreational expenditure needed, but also data on further rounds of spending in the region's economy that are stimulated by the expenditure. If the expenditure stimulates rounds of further spending in the

region's economy, the increase in the economy's income exceeds the injection of expenditure. This is known as the multiplier effect.

For example if, in response to the expenditure, local businesses expand and employ more local people, more income is paid to households. If these households spend some of this income on goods and services produced in the region, it encourages the suppliers to expand their businesses. These businesses may respond by employing more people from the region and as a result, more income is paid to households, and consumption may increase yet further.

However, if the businesses selling goods and services to recreational visitors obtain most of their inputs (including labour) from outside the region, the expenditure may not stimulate an increase in income to the regional economy. The economic benefits leak out to other regions that supply the inputs. Another consideration is that recreational expenditure may increase in one region at the expense of another region. Income to the national economy increases only if recreational expenditure or the multiplier effect increase at a national scale.

How can we estimate the economic value of recreational visits to the natural environment?[1]

Economic value quantifies the impact of a visit on people's wellbeing in terms of a common metric (money)[2]. Because an admission fee is not charged for many sites used for recreation in the natural environment, there is no obvious market price that we can use to estimate the economic value of a visit. However, the costs and time that people expend undertaking recreational visits can be used as a proxy for the value of the benefits they receive. The approach used for such analysis, known as the travel cost method, usually employs the following data: cost of transport for the journey (discussed further below); admission fees; the length and value of time associated with visits (which, following Department for Transport procedures, requires further data on incomes to allow for variation in the value of time across society); information on the type and quality of sites visited and the availability and quality of alternative (substitute) sites. The travel cost method uses statistical analyses to examine visitors' choices regarding sites and observe the trade-off between site quality, costs and visit frequency. Apart from admission fees and possibly the cost of fuel used in making the visit, the travel cost method does not usually employ expenditure data.

A detailed travel cost model of outdoor recreational visits in Great Britain[34] has recently been derived using MENE data (on recreational visits in England). The model has been used to estimate the impact on recreation of different scenarios for spatial distribution of woodland. It estimates the value of people's outdoor recreational visits in terms of the value of their time (which in turn utilises national coverage income data[5]) and the cost of travel. The model employs an average cost of transport per kilometre (an approach commonly adopted for the travel cost method) but adjusts this for the availability and quality of roads and hence travel speed for the journey. Travel time and distance for visits are calculated by applying a geographical information system (GIS) to incorporate the availability and quality of the UK road network with MENE data on the location of visitors' homes and visited sites. Further development of this model is ongoing.

What do expenditure data currently collected by MENE tell us?

The data provide us with information on the expenditure that people make during trips that include a visit to the natural environment. These data reveal how spending behaviour differs according to people's characteristics and the nature of their visit (as illustrated in the 2013/14 MENE report). Also, the data can be assumed to provide information on parking costs and admission fees that people incur in making a visit to the natural environment. As explained above, further information is needed to estimate expenditure on other items that is incurred specifically as part of a visit to the natural environment. When it is combined with additional information, such data could be used to estimate the economic value or the regional economic impact of visits to the natural environment.

References

[1] We are grateful to Professor Ian Bateman from the University of East Anglia who has co-written this paragraph and the paragraph that follows.

[2] Money is used so the value can be easily combined with other data (such as costs of improving a site) to inform analysis, for example of potential environmental improvements.

[3] Bateman, I.J., Harwood, A., Mace, G.M., Watson, R., Abson, D.J., Andrews, B., Binner, A., Crowe, A., Day, B.H., Dugdale, S., Fezzi, C., Foden, J., Haines-Young, R., Hulme, M., Kontoleon, A., Lovett, A.A., Munday, P., Pascual, U., Paterson, J., Perino, G., Sen, A., Siriwardena, G., van Soest D., and Termansen, M. (2013) Bringing ecosystem services into economic decision making: Land use in the UK, *Science*, Vol 341, No. 6141: 45-50, 5th July 2013. DOI: 10.1126/science.1234379

[4] Bateman, I.J., Day, B.D., Agarwala, M., Bacon, P., Baďura, T., Binner, A., De-Gol, A., Ditchburn, B., Dugdale, S., Emmett, B., Ferrini,S., Fezzi, C., Harwood, A., Hillier, J., Hiscock, K., Hulme, M., Jackson, B., Lovett, A., Mackie, E., Matthews, R., Sen, A., Siriwardena, G., Smith, P., Snowdon, P., Sünnenberg, G., Vetter, S., & Vinjili, S. (2014) UK National Ecosystem Assessment Follow-on. Work Package Report 3: Economic value of ecosystem services. UNEP-WCMC, LWEC, UK. http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx.

[5] Data obtained from the Experian Mosaic database which in turn utilises Census and other national data. For an overview see Experian (2009) The consumer classification of the United Kingdom and for detail see Experian (2008) Mosaic UK 2009/2008.