Natural England Commissioned Report NECR056

Monitor of Engagement with the Natural Environment (MENE)

Comparison of MENE and England Leisure Visits Survey 2005

NATURAL

Foreword

Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England.

Background

Natural England, Defra and the Forestry Commission commissioned TNS Research International to undertake the Monitor of Engagement with the Natural Environment (MENE) survey. The first year's fieldwork began in February 2009, with the results published on Natural England's website in September 2010.

The survey was commissioned in order to improve upon the limited evidence base about the benefits that people derive from contact with the natural environment. Specifically there was a lack of information about how and why people currently engage with the natural environment.

The results from MENE have provided us with volumetric trend data for the first time in twenty years. This is a major step-change forward from numerous preceding, non-comparable surveys. This volumetric trend data allows us to:

- Understand how people use, enjoy and are motivated to protect the natural environment.
- Provide data that monitors changes in use and enjoyment of the natural environment over time at a range of different spatial scales and for key groups within the population.

This report compares the findings from MENE with the English Leisure Visits Survey (ELVS) undertaken in 2005. ELVS collected information on the extent of participation in leisure day visits and provided estimates of the volume of visits. Although not directly comparable with MENE, a comprehensive statistical exercise was undertaken in order to adjust certain key ELVS results so that they can be considered comparable with the equivalent MENE findings.

How will Natural England use the findings?

In relation to its remit for promoting public understanding, conservation and enjoyment of the natural environment, Natural England will use the findings to:

- Inform its own work, and that of other interested parties, to link it more closely to need.
- Evaluate the impact and effectiveness of this work. The annual report presents the headline findings for 2009-10, and this comparison report allows Natural England and other interested parties to consider changes over time.

Other relevant reports

Available from:

www.naturalengland.org.uk/ourwork/enjoying/research/monitor

- The annual report (NECR049), which summarises the first year responses to the survey.
- Summary data tables (as an annex to the annual report) provide cross tabulations of all survey questions against standard socio-economic variables.
- A technical report (NECR050) provides full details of the survey methodology including approaches to sampling, grossing and weighting, and estimates of confidence intervals.

Further reports are planned from the 2009-10 survey and will be available from the Natural England website.

Official Statistics

The results from the MENE survey are categorised as 'Official Statistics' and have been produced and published according to arrangements approved by the UK Statistics Authority. A document detailing Natural England's compliance with the Code of Practice for Official Statistics is available separately on the Natural England website.

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1 Introduction

Background

- 1.1 The first year of fieldwork for the Monitor of Engagement with the Natural Environment (MENE) survey took place between March 2009 and February 2010. 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 such as gardening, watching wildlife and volunteering in the natural environment. The survey is undertaken by TNS Research International on behalf of Natural England, the Department for Environment, Food and Rural Affairs (Defra) and the Forestry Commission.
- 1.2 Prior to MENE, a series of leisure day visits surveys had been carried out in 1994, 1996, 1998, 2002/03 and 2005. These various surveys collected information on the extent of participation in leisure day visits amongst the population and provided estimates of the volume of visits.
- 1.3 However, while these previous surveys included visits to the countryside, they did not provide robust information on people's day to day use and enjoyment of the natural environment. MENE therefore represents a development on the previous surveys, providing a far more comprehensive measurement of all types of visits to and engagement with the natural environment.

Comparison exercise

- 1.4 There is considerable interest in comparing the results of MENE with those obtained in previous leisure day visits surveys, in particular the 2005 England Leisure Visits Survey (ELVS). However, as outlined above, MENE collects data on a wider range of types of visits to the natural environment than the previous survey, while ELVS recorded certain types of leisure pursuits which are not included in MENE. Furthermore, while the MENE interviews are conducted on a face to face basis, a telephone interview method was used for ELVS.
- 1.5 These changes in survey scope and method mean that the published results from MENE and ELVS cannot be compared directly.
- 1.6 However, recognising the demand for data regarding changes in levels of participation in outdoor visits, Natural England commissioned TNS Research International to undertake an exercise which would allow the adjustment of certain key ELVS results in order that they could be regarded as comparable with the equivalent MENE findings. The exercise allows for the comparison of people's activities during a visit, but it does not allow for the comparison of the actual destination of people's visits.
- 1.7 It should be noted that the survey methods used in the leisure day visits surveys which preceded ELVS varied from those used in both MENE and ELVS and have not been included in this comparison exercise. Therefore, while the outcomes of this exercise allow for valid comparisons between 2005 and 2009/10, it is not possible to compare these results with those obtained in earlier periods.
- 1.8 The full results of MENE 2009/10 are provided under a separate cover¹.

¹ Monitor of Engagement with the Natural Environment Annual Report from the 2009-10 survey Monitor of Engagement with the Natural Environment (MENE): Comparison of MENE and England Leisure Visits Survey 2005

Overlap activities

1.9 The activities included in the two surveys - ELVS 2005 and MENE - are listed in Tables 1-1 and 1-2 below.

Table 1-1 Activities used in ELVS 2005

To eat or drink out

Walk, hill-walk, ramble

Visit friends, relatives at their home

To go shopping (not food and not regular)

Take part in sports or active pursuits - indoor, outdoor, field, water

Hobby or special interest

For entertainment (for example, cinema, theatre, club)

To take part in informal sports, games, relaxation and wellbeing

Visit leisure attraction, place of interest, special event/exhibition

Swimming

Visit park or garden

Watching live sport or attending a live event (not on TV)

Drive, sightsee, picnic, pleasure boating

Cycling, mountain biking

Visit beach, sunbathe, paddle in sea

Table 1-2 Activities used in MENE 2009-10

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

1.10 However direct comparisons between the survey results can only be made where the same activity has been asked about. These were deemed to be as follows.

Table 1-3 Overlap activities included in both ELVS 2005 and MENE

ELVS 2005	MENE 2009/2010
Walk, hill-walk, ramble	Walking, not with a dog (including short walks, rambling, and hill walking)
Visit leisure attraction, place of interest, special event/exhibition	Visiting an attraction
Drive, sightsee, picnic, pleasure boating	Appreciating scenery from your car (for example, at a viewpoint) Picnicking
Cycling, mountain biking	Off-road cycling or mountain biking Road cycling
Visit beach, sunbathe, paddle in sea	Visits to a beach, sunbathing or paddling in the sea

1.11 The analysis therefore concentrated on the activities from ELVS and MENE which seemed to match. In the sections which follow these activities have been referred to as the "overlap activities".

- 1.12 As described in more detail in Section Three, the comparison exercise took account of the changes in questionnaire wording between ELVS and MENE, including the differences in wording used to describe the similar activities illustrated above.
- 1.13 The next section of this report presents the findings from the comparison exercise, while the approach adopted for the comparison is shown in Section 3.

2 Results

2.1 This section provides a summary of the adjusted ELVS data and comparisons with equivalent MENE 2009/10 results.

Volume of visits taken

- 2.2 During 2009/10, MENE recorded an estimated 2.86 billion visits to the natural environment. Of those visits, 990 million involved one or more of the overlap activities shown in Figure 2-1 This represents a ten per cent increase from the adjusted ELVS estimate of 898 million visits involving the overlap activities for the period from February 2005 to January 2006.
- 2.3 Taking account of population growth over this period (2.9 per cent), it is estimated that there has been a real increase in these activities from 2005 of around 7 per cent.

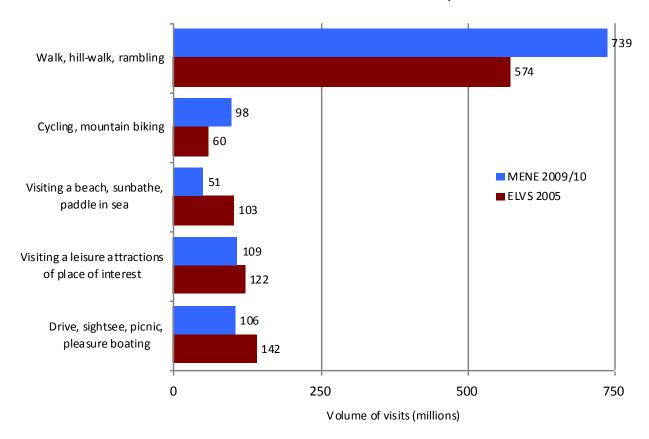


Figure 2-1 Comparison of adjusted ELVS 2005 and MENE 2009/10 results – volume of visits taken by activity

- 2.4 The increase in the total volume of visits taken was largely related to increases in those visits to the natural environment which involved walking (+28%) and cycling and mountain biking (+63%) while the volume of visits involving the other activities decreased between 2005 and 2009/10.
- 2.5 Variations in weather conditions may have had an influence on the changes in activities undertaken on visits, especially in relation to weather 'sensitive' activities such as sunbathing, paddling and picnicking. Correspondingly, Met Office data suggests that the weather in England

- during the summer² of 2009 was somewhat wetter than in 2005, with 35% more days with rainfall of 1mm or more (35 days in 2009 compared to 26 in 2005).
- 2.6 It should also be borne in mind that the results in Figure 2-1 relate to activities undertaken rather than places visited. Therefore, while the volume of visits including the activity 'visiting a beach, sunbathing and paddling in the sea' decreased, it may be that a proportion of the increased volume in walking visits included more visits taken to a coastal destination³.

Proportion of population taking visits

2.7 MENE 2009/10 found that in the week prior to interview, an average of 24 per cent of the English adult population had taken visits to the natural environment involving one or more of the overlap activities. This represents an increase of four percentage points from the adjusted ELVS estimate of 20 per cent for the period from February 2005 to January 2006.

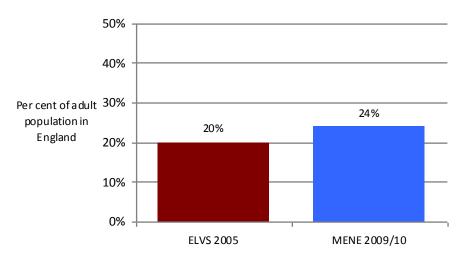


Figure 2-2 Comparison of adjusted ELVS 2005 and MENE 2009/10 results – percentage of population taking visits involving overlap activities at least once per week

Changes in the profile of participants

- 2.8 As illustrated in Figure 2-1, visits involving walking contributed most to the overall increase in the volume of visits between 2005 and 2009/10.
- 2.9 To obtain an indication of changes in terms of who is participating in this activity, Figures 2-3 and 2-4 below compare the adjusted ELVS 2005 and MENE 2009/10 results relating to the profile of walking participants.
- 2.10 While the volume of walking visits taken has increased amongst all age groups, the increase appears to have been slightly greater amongst those in the 16 to 24 years and 55 years and over age groups. Correspondingly, Figure 2-3 illustrates the slightly larger proportions of participants within these age groups amongst those who took part in walking in the more recent survey period. However it should be noted that these variations are marginal so unlikely to be of particular significance.

² Summer months defined as June to August. See www.metoffice.gov.uk/climate/uk/

³ 13% of the 739 million visits taken in 2009/10 which involved walking were taken to the coast

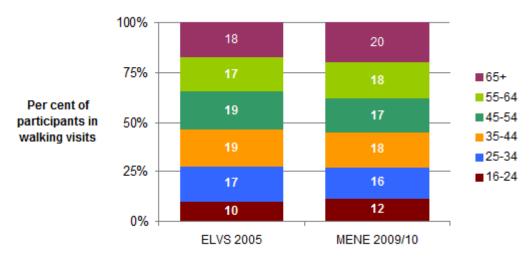


Figure 2-3 Age profile of participants in walking visits – adjusted ELVS 2005 and MENE 2009/10 results 2.11 The gender profile of participants in walking visits did not change significantly (Figure 2-4).

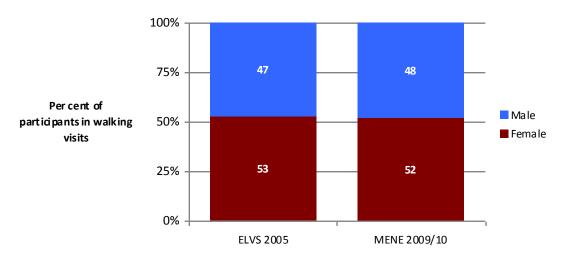


Figure 2-4 Gender profile of participants in walking visits – adjusted ELVS 2005 and MENE 2009/10 results

3 Summary of approach

- 3.1 There are a number of differences between MENE and the ELVS survey of 2005, including the following:
 - a) The type of outdoor activities recorded has been substantially revised and there are only a limited number of activities that are common to the two surveys.
 - b) The question wording and the sequencing of the questions in the interview has changed, which could lead to different answers being given.
 - c) The data collection methodology has changed from telephone interviewing in 2005 to face to face interviewing in 2010, which could affect the ways in which respondents answer the questions.
- 3.2 The first of these changes means that any comparison is restricted to only those activities that were common to both surveys, known as the "overlap activities", as described in paragraphs 1.9 to 1.11.
- 3.3 To provide a means of comparing the two surveys on the overlap activities, a series of parallel surveys was undertaken during 2009. These consisted of:
 - a) A telephone survey using the ELVS questionnaire. By comparing the results of this survey with the face to face survey (as described in b) below) for the same period this would provide an estimate of the effect of changing the data collection methodology from telephone to face to face interviews. This is described in the sections that follow as the "Mode Test Survey".
 - b) A face to face survey using the ELVS questionnaire. By comparing the results of this survey with those from MENE for the same periods, this parallel survey was designed to provide an estimate of the effect of the different questions and different question sequencing on the number of activities undertaken. This is described in the sections that follow as the "Questionnaire Test Survey".
- The Mode Test Survey was conducted using the TNS Telephone (CATI) omnibus. The questionnaire used was an abbreviated version of the 2005 ELVS questionnaire, and omitted questions that were not relevant to this exercise. Most of the omitted questions had followed the relevant questions in ELVS 2005 and so their omission would not have a material effect on the responses. Some questions regarding overnight trips which had preceded the relevant questions in 2005 were also omitted. It is possible that answers to the relevant questions may have been affected by respondents having been prompted to talk about overnight trips in the previous week. The proportion who had taken an overnight trip in 2005 was unknown but was expected to be relatively small, so we could conclude that the impact of these questions being omitted was likely to be small. Nevertheless, to compensate for this, a single question asking whether or not the respondent had taken an overnight trip within the previous week was included in the Questionnaire Test Survey prior to the relevant questions.
- 3.5 The Questionnaire Test Survey was conducted using the TNS Face to Face Omnibus, utilising those sampling points which are not included within the MENE fieldwork coverage MENE utilising a half sample on each of the survey waves. This therefore gave an exact replication of the MENE data collection methodology, but with the ELVS questionnaire.
- 3.6 Data was collected for both the Questionnaire Test Survey and the Mode Test Survey in three waves during May, July/August and November 2009. This distribution was chosen to ensure a spread of seasonal activities and to provide some representation of seasonal variation. It was not intended to analyse by season, but it was likely that response differences between the questionnaire and modes could vary at different times of year because of the changing frequency and nature of activities, both of which could affect accuracy of recall and hence response patterns.

3.7 Data from MENE was analysed for the same periods to provide the required comparisons. The sample sizes by wave were as follows.

Table 3-1 Sample sizes by wave and survey

	Questionnaire test	Mode test	MENE
w/c May 15 th 2009 (week 21)	898	850	1,133
w/c 31 st July 2009 (week 31)	939	862	863
w/c 13 th November 2009 (week 46)	882	856	889

Sampling methods

- 3.8 The Mode Test Survey was conducted using the TNS Telephone Omnibus. This necessarily had a different sampling approach to the Questionnaire Test Survey. The TNS Telephone Omnibus utilises Random Digit Dialling to provide a random sample of households, whereas the Face to Face Omnibus uses a sampling method of selecting areas from the Postcode Address File to be nationally representative and imposing quotas on the selection of individuals within the sample locations.
- 3.9 The TNS Telephone Omnibus Random Digit Dialling sampling methodology did not precisely replicate the ELVS sampling methodology. To have done so exactly would not have been possible within the available budget. However, although different, it is equally exacting in its selection of sampling points and respondents and so, it was considered that data collected in this way represented a good approximation to the equivalent ELVS data.

Comparison between data collection modes

- 3.10 The key question to be compared was Question Three, the main activity undertaken on each trip in previous week. Both telephone and face to face data collection modes used the same ELVS questionnaire, with appropriate minor alterations for face to face interviews.
- 3.11 To provide an annual equivalent:
 - a) For each week of the survey, the data was weighted and grossed to the total population of England. This meant that each survey week was equivalent and removed any issues of different sample sizes.
 - b) The data was run on the total number of trips taken in the previous week.
 - c) In the analysis of the combined data from the three weeks of interviewing, weights were applied in order that the May data represented 16 weeks of spring and early summer; the July/August data 14 weeks of summer; and the November data 22 weeks of autumn and winter. Therefore, the outputs were equivalent to the data collected over a full year, as recorded by ELVS in 2005 and MENE.

Table 3-2 Number of activities undertaken in full year equivalent (millions)

	Interview mode	
	ELVS telephone	ELVS face to face
Walk, hill-walk, rambling	843.5	852.4
Cycling, mountain biking	87.1	94.4
Visit beach, sunbathe, paddle in sea	29.9	30.7
Visit a leisure attraction or place of interest	100.2	101.3
Drive, sightsee, picnic, pleasure boating	37.8	40.4
Total no of activities	1,098	1,119

3.12 One potential difference between data collected in telephone and face to face interviews is that telephone interviewing gives higher levels of response per item. This is because in a telephone survey, any list of items has to be read out and the respondent considers each one individually, whereas in face to face interviewing, the list of items is shown to the respondent from which they are asked to choose the appropriate responses. This potential difference in the level of response is likely to increase the longer the list of items, because respondents do not carefully read long lists. The data suggests that this was not an issue in this exercise; primarily due to the fact that the list of activities was sufficiently short not to have created any differences. Indeed, any differences that were evident tended to deliver higher figures for the face to face methodology.

Transforming the data

- 3.13 The next stage was to develop a relationship between the face to face and telephone results in order that the telephone results could be transformed to be equivalent to the face to face survey data.
- 3.14 The correlation between the two sets of estimated activity totals was very high, (1.00) which enabled us to use a simple linear regression to determine the relationship between the two sets of data. This was:

$$y = 1.0069x + 2.2811$$

Where x = the telephone data, y = the face to face data

3.15 By applying this formula to the telephone data it has been transformed into a reasonable approximation of the face to face survey data.

Table 3-3 Number of activities undertaken in full year equivalent (millions) following transformation

	Interview mode		
	ELVS telephone data transformed	ELVS face to face	
Walk, hill-walk, rambling	851.6	852.4	
Cycling, mountain biking	90.0	94.4	
Visit beach, sunbathe, paddle in sea	32.4	30.7	
Visit a leisure attraction or place of interest	103.1	101.3	
Drive, sightsee, picnic, pleasure boating	40.3	40.4	
Total no of activities	1,117	1,119	

3.16 Applying this formula to the ELVS 2005 overlap activities would provide a reasonable correction for the change in data collection mode.

Comparison between MENE and ELVS questionnaires

- 3.17 The second stage compared the effect of the different question wordings between the MENE and ELVS approaches.
- 3.18 To do this, the reported level of overlap activities from the MENE survey for the three survey weeks were compared with the same activities from the Questionnaire Test Survey (face to face methodology) to determine the relationship between data from the two questionnaires, which would then be applied to the 2005 ELVS telephone survey data after transformation to represent the face to face survey methodology.

Table 3-4 Number of activities undertaken in full year equivalent (millions)

	Questionnai	re
	ELVS face to face	MENE
Walk, hill-walk, rambling	852.4	731.0
Cycling, mountain biking	94.4	100.6
Visit beach, sunbathe, paddle in sea	30.7	55.8
Visit a leisure attraction or place of interest	101.3	118.8
Drive, sightsee, picnic, pleasure boating	40.4	85.1
Total no of activities	1,119	1091

Transforming the data

3.19 One of the differences in the questionnaires is that MENE asks for all activities undertaken on the occasion in question whereas the ELVS questionnaire only asks for the main activity. Thus whilst more than one answer can be given in response to the MENE question, only one can be given to the ELVS question. A simple count of MENE responses is therefore higher than the equivalent ELVS responses.

- 3.20 Ideally we would have wished to isolate the "main" activity in the MENE response in order to make it directly comparable with the ELVS data. However, as the question is not asked in the MENE questionnaire, this was not possible. It would be possible to allocate activities by applying an order of priority, e.g. that "sightseeing" is always considered to be the main activity when it is answered together with "Visiting a beach", and "Walking" is always considered to be the main activity when answered together with "sightseeing". However, any such allocation would be subjective and could not take into account all the circumstances of the individual respondent's situation. This approach was therefore rejected.
- 3.21 The alternative approach was to decrease the level of each activity in proportion to the amount of occasions on which more than one activity was undertaken. The average number of activities per occasion was 1.115. Each activity was therefore reduced by this proportion.

Table 3-5 Number of activities undertaken in full year equivalent (millions)

	Questionnaire		
	ELVS face to face	MENE all activities corrected	
Walk, hill-walk, rambling	852.4	702.9	
Cycling, mountain biking	94.4	96.8	
Visit beach, sunbathe, paddle in sea	30.7	53.6	
Visit a leisure attraction or place of interest	101.3	114.2	
Drive, sightsee, picnic, pleasure boating	40.4	81.9	
Total no of activities	1,119	1,049.4	

- 3.22 There is again a very strong correlation between the two sets of estimated activity totals (1.00), caused in part by the one outlier, "walking". Without this data point the correlation reduces to 0.91. A simple linear regression transformation equation was again considered.
- 3.23 Also considered was an individual activity proportional correction. This was considered because several of the activity descriptions had changed, so it was possible that activities previously reported in ELVS might not be under-reported in MENE, and other activities might be over-reported instead. This suggested that looking at each activity individually, as some might increase and others decrease, might yield a better transformation. Both approaches were tried with the following outcome to the ELVS telephone data.

Table 3-6 Outcomes of alternative transformation approaches (millions)

	ELVS telep	MENE	
	Regression transformation	Individual activity transformation	All activities corrected
Walk, hill-walk, rambling	702.3	702.3	702.9
Cycling, mountain biking	105.2	92.3	96.8
Visit beach, sunbathe, paddle in sea	60.0	56.5	53.6
Visit a leisure attraction or place of interest	115.6	116.4	114.2
Drive, sightsee, picnic, pleasure boating	66.3	81.8	81.9
Total no of activities	1,049.5	1,049.2	1,049.4

^{3.24} The regression transformation did not give good results for "cycling", which it over-estimated, and for "sightseeing" which it under-estimated. These variations were possibly due to the changes in wording used for the individual items. It was therefore decided to adopt the individual activity transformation approach.

Transformation of ELVS 2005

3.25 The process described above gave a two-stage process by which the ELVS 2005 data for the five overlap activities could be transformed to be comparable to the current MENE survey results.

Table 3-7 Results of transformation of ELVS 2005 and MENE 2009/10 results (millions of visits)

	ELVS 2005		MENE 2009/10
	Original data	Transformed to MENE questionnaire	
Walk, hill-walk, rambling	662.0	574.0	739
Cycling, mountain biking	54.0	60.4	98
Visit beach, sunbathe, paddle in sea	54.0	102.8	51
Visit a leisure attraction or place of interest	100.8	121.7	109
Drive, sightsee, picnic, pleasure boating	64.8	142.0	106
Total no of activities	936	898	990

- 3.26 In summary, the transformation of the ELVS 2005 data to be comparable to MENE was conducted by:
 - a) the application of a regression equation to account for change in mode of data collection
 - b) individual activity corrections to account for changes in activity descriptions
 - c) down-weighting of transformed total by 1.115 to account for the change from main activity to all activities.
- 3.27 The analysis has also allowed for the transformation of data regarding the proportions of the population taking part in overlap activities (penetration) during the seven day survey recall period.
- 3.28 The penetration of overlap activities amongst the sample in the Telephone Survey was 18.3%. During the same weeks the proportion recorded by MENE, using the Face to Face Survey approach was 24.7%. Therefore the change in data collection mode and in question wording combined give an increase of 35.0% in the proportion of people reporting an overlap activity.
- 3.29 The proportion of people reporting an overlap activity in ELVS 2005 was 14.8%. Applying this proportional uplift for change in data collection method and question wording produces 20.0%. As shown below, over the full MENE 2009/10 period, the proportion of respondents recorded as undertaking overlap activities in the last 7 days MENE 2009/10 was 24.0%.

Table 3-8 Results of transformation of ELVS 2005 and MENE 2009/10 results (proportion of adults undertaking any overlap activities in the last 7 days)

	ELVS 2005		MENE 2009/10
	Original data Tra	nsformed to MENE questionnai	re
Proportion of adult population undertaking one or more overlap activity in last 7 days	14.8%	20.0%	24.0%

4 Conclusion

- 4.1 The exercise described in this report has achieved its objectives, allowing robust comparisons to be drawn between the key results of the ELVS 2005 and MENE 2009/2010 surveys. The approach followed has taken account of the differing scope of each survey, changes in questionnaire content and method of data collection.
- 4.2 Prior to this exercise, any comparisons of the results of surveys in the leisure visits series were conducted directly, without any attempt to take account of changes in survey methodology. These comparisons may have resulted in misleading conclusions being drawn regarding changes in levels of participation in outdoor recreation and increases or decreases in the volumes of visits taken.
- 4.3 The results of this exercise provide a more robust basis for comparisons of the 2005 and 2009/2010 surveys and illustrate an overall increase in both the volume of visits taken to the natural environment and the proportion of the population taking visits on a regular basis. However the picture is complex with apparent increases in participation in walking, cycling and mountain biking partly off-set by decreases in other more 'weather dependant' activities such as sunbathing, paddling and picnicking. Also the patterns of engagement amongst different population groups may have changed over time with certain groups increasingly likely to visit the natural environment while there is less change amongst others.
- 4.4 Moving forward, MENE continues to record the volumes of visits taken to the natural environment using a consistent survey method. Results for the second year of this survey will include an analysis of volumes of visits involving the ELVS 'overlap' activities which were the focus of this report. This data will enhance our understanding of the impact of weather conditions and other external factors on levels of engagement and changing patterns of engagement amongst different population groups.