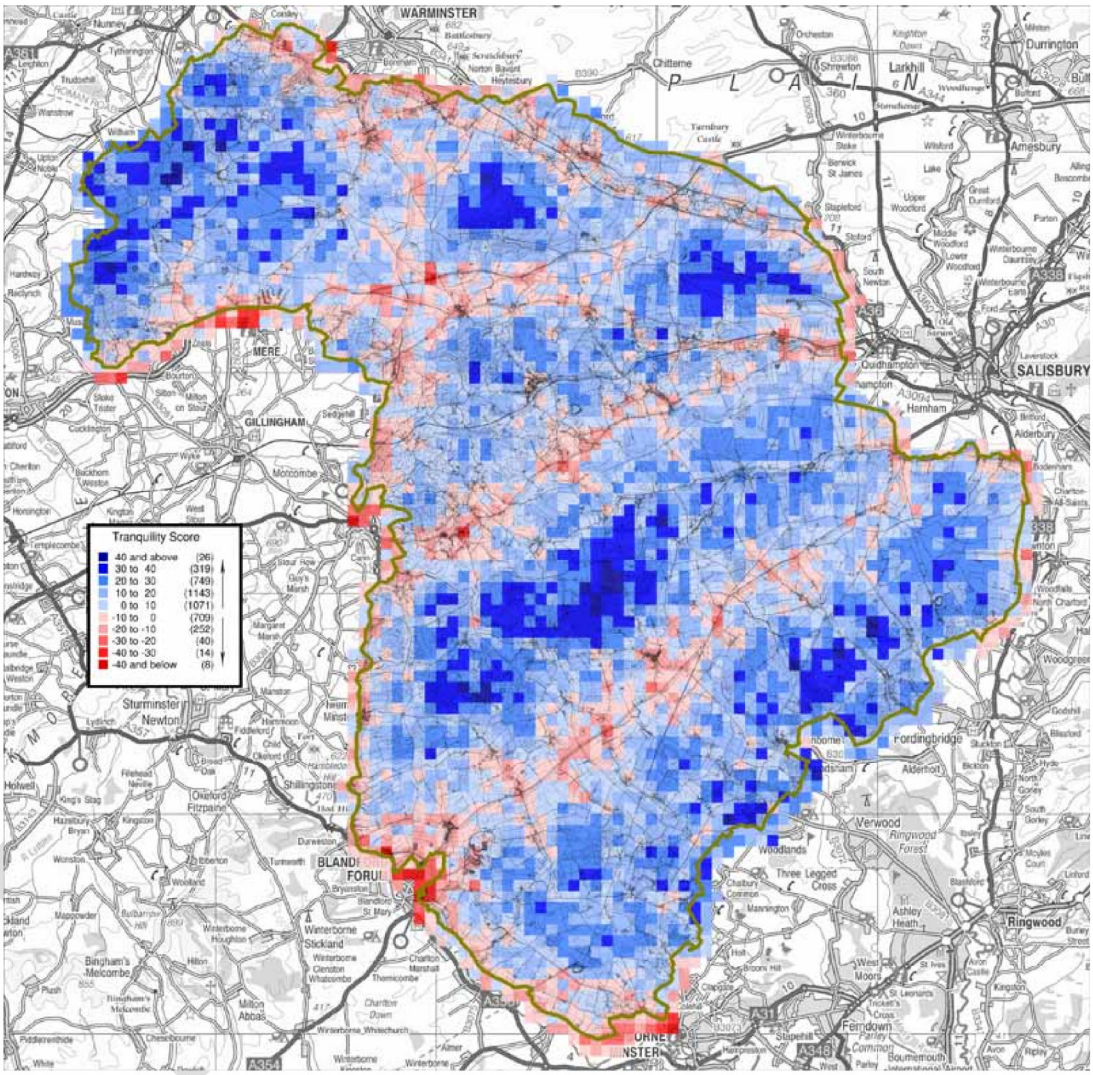
Cranborne Chase and West Wiltshire Downs AONB Tranquillity Mapping

Ground Truthing Report and Methodology



National Tranquillity Mapping Data 2007 developed for the Campaign to Protect Rural England and Natural England by Northumbria University. OS Licence number 100018881.

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Acknowledgements

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- Vicki White, a temporary staff member at the AONB Office, assisting in setting up of ground truthing methodology and organisation of ground truthing staff.

1 Preface

The Cranborne Chase and West Wiltshire Downs Area of Outstanding Natural Beauty was designated with the purpose of 'Conserving and Enhancing Natural Beauty'. It covers 981 sq km and stretches across parts of four counties. Consultations during the processes of preparing and reviewing the AONB Management Plan have indicated that tranquillity is a key attribute of this AONB.

In order to facilitate and encourage actions and activities that sustain and enhance tranquillity, it is first necessary to understand in greater detail which are the **most** and **least** tranquil areas, and why. Furthermore, a greater understanding of the characteristics of locations with intermediate tranquillity may be able to inform proposals to enhance the situation.

2 Summary

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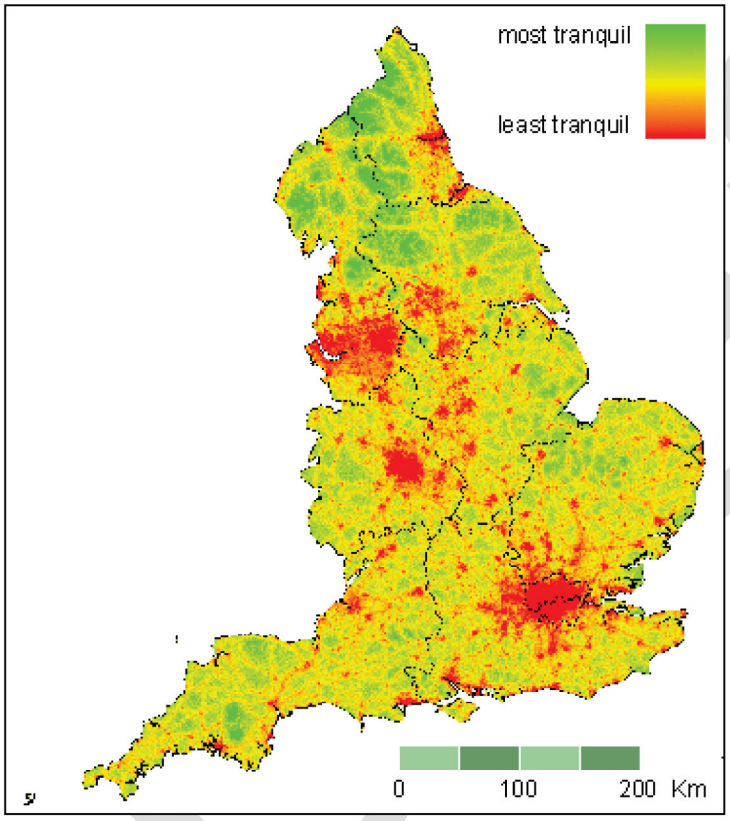
3 Introduction

3.1 The New Tranquillity Map

In October 2006 CPRE published its new Tranquillity map of England. The map is a product of 3 years research by Northumbria and Newcastle Universities. The map derives from extensive research, bringing together surveys of the human experience of tranquillity – and the factors which add to, or detract from it – with desk based analysis of national data on the presence of such factors in the landscape. These measurements have been applied via 500x500m squares covering the land mass of England, and are based upon 'seeing' and 'hearing' factors which contribute to, or detract from, overall tranquillity.



• **Figure 1 -** The New Tranquillity Map

The tranquillity data is broken down into 'what you can see' and 'what you can hear'.
Researchers asked more than 1,000 people what they thought tranquillity was, what enhances it and what detracts from it and how important those factors are to them. The 44 factors which emerged from that exercise were used to collect data on the characteristics of each locality – such as its closeness to roads and buildings, how noisy and crowded it is, how near to water and whether it offers views of open countryside.

The 44 factors are shown below, along with the weightings:

	ID	Question	Total	Percentage Weighting
Positive	a01	Seeing, A natural landscape	533	6.59
	a13	Hearing, Birdsong	396	4.90
	a17	Hearing, Peace and Quiet	271	3.35
	a07	Seeing, Natural looking woodland	256	3.17
	a12	Seeing, The stars at night	245	3.03
	a08	Seeing, Streams	225	2.78
	a11	Seeing, The Sea	221	2.73
	a15	Hearing, Natural Sounds	212	2.62
	a14	Hearing, Wildlife	183	2.26
	a19	Hearing, Running water	180	2.23
	a09	Seeing, Rivers	176	2.18
	a02	Seeing, Wide open spaces	174	2.15
	a03	Seeing, A wild landscape	171	2.12
	a05	Seeing, Trees in the landscape	146	1.81
	a10	Seeing, Lakes	118	1.46
	a04	Seeing, Remote landscapes	113	1.40
	a18	Hearing, No human sounds	109	1.35
	a20	Hearing, Lapping water	109	1.35
	a21	Hearing, The sea	84	1.04
	a06	Seeing, Deciduous trees in the landscape	72	0.89
	a16	Hearing, Silence	47	0.58
		Sub-total	**4041**	**50**
Negative	a41	Hearing, Constant noise from cars, lorries and/or motorbikes	886	10.96
	a22	Seeing, Lots of people	627	7.76
	a30	Seeing, Urban development	373	4.62
	a24	Seeing, Overhead light pollution (night time)	270	3.34
	a37	Hearing, Lots of people	266	3.29
	a25	Seeing, Low flying aircraft	228	2.82
	a38	Hearing, Low flying aircraft	225	2.78
	a28	Seeing, Power lines	221	2.73
	a34	Seeing, Towns and Cities	202	2.50
	a33	Seeing, Roads	139	1.72
	a44	Hearing, Non-natural sounds	107	1.32
	a31	Seeing, Any signs of human impact	102	1.26
	a36[VIII]	Seeing, Military training (not aircraft)	101	1.25
	a29	Seeing, Wind turbines	88	1.09
	a42	Hearing, Occasional noise from cars, lorries and/or motorbikes	44	0.54
	a43	Hearing, Military training (not aircraft)	32	0.40
	a32	Seeing, Railways	30	0.37
	a26	Seeing, High altitude aircraft	25	0.31
	a40	Hearing, Trains and Railways	24	0.30
	a23	Seeing, Anyone at all	18	0.22
	a27	Seeing, Coniferous woodland	17	0.21
	a39	Hearing, High altitude aircraft	11	0.14
	a35	Seeing, Villages and Scattered Houses	5	0.06
		Sub-total	**4041**	**50**
		Total	**8082**	**100**

The weightings represent the proportion of the total positive or negative aspects of tranquillity assigned from the research, to the individual factors.

• **Figure 2 -** The 44 Factors and weightings

How can this new tranquillity data help to protect and enhance the tranquillity of the AONB?

Once it is known what tranquillity means to people and a rigorous way to measure it, we can create policies and take decisions about land use to protect and enhance tranquillity and confidently monitor how well the policies are working.

Tranquillity can be measured, mapped, valued and protected. Sometimes it may even be enhanced. This will not happen through good will or warm words, but through concerted and effective action. The new methodology is a potentially powerful tool for land use and landscape planning. It has implications for targets, indicators, policies and plans relating to quality of life, countryside quality, landscape strategies, environmental management, spatial development and sustainable development.

CPRE is keen to promote tranquillity data to policy and decision-makers at a national, regional, and at a local level. At the same time as the national data shown above was released, it was also indicated that more specific datasets might be available for certain areas at some point in the future. With support from the South Wiltshire Branch of CPRE the AONB sought, and obtained, the tranquillity dataset for this AONB.

Other useful sources of information

CPRE have produced new 'intrusion' maps which show that the area affected by new development stretches far beyond their actual 'footprint'. This shadow of urban growth or new roads or runways means that with 11% of England already urbanised, 50% is seriously disturbed by the sight, noise, and movement of development.
From the 1960s to 1990s the total area of England disturbed by the noise and visual intrusion of roads, urban areas and major infrastructure rose from 26% to 41%. In the past 15 years alone another 9% has been blighted. At this rate of loss much of what remains could all but disappear in the next 80 years.
An opinion poll commissioned by CPRE shows that 72% of people value the tranquillity of the countryside above other factors.

Appendix X shows the intrusion map for England, along with the factors used in its creation.
For further information, please see the Intrusion section on the CPRE website (www.cpre.org.uk).

3.2 The Tranquillity map explained

The researchers – from Northumbria University's Centre for Environmental and Spatial Analysis and Participatory Evaluation and Appraisal in Newcastle upon Tyne and Newcastle University's Landscape Research Group, in collaboration with Bluespace Environments, Durham – had carried out a detailed pilot study of tranquillity in the North East in 2004 and a follow-up study in the Chilterns a year later.

CPRE's national project has developed and extended this work. It has two main parts. Firstly, the researchers used a nationwide survey to test what tranquillity means to people and their perceptions of what factors were most likely to add to and to detract from their sense of experiencing tranquillity when they visited the countryside. Secondly, using a Geographical Information Systems (GIS) model, they associated the survey information with a range of national datasets and took account of topography to create a map showing how likely each locality was to make people feel tranquil.

What tranquillity is – the top 10 survey responses

1.Seeing a natural landscape
2.Hearing birdsong
3.Hearing peace and quiet
4.Seeing natural looking woodland
5.Seeing the stars at night
6.Seeing streams
7.Seeing the sea
8.Hearing natural sounds
9.Hearing wildlife

10.Hearing running water

What tranquillity is not – the top 10 survey responses

1.Hearing constant noise from cars, lorries and/or motorbikes
2.Seeing lots of people
3.Seeing urban development
4.Seeing overhead light pollution
5.Hearing lots of people
6.Seeing low flying aircraft
7.Hearing low flying aircraft
8.Seeing power lines
9.Seeing towns and cities
10.Seeing roads

The tranquillity map is made up of many layers of information based on what people say adds to and detracts from tranquillity, weighted according to how important those factors are and taking into account the country's topography. If you could peel away the layers, you would see maps which show the positive or negative impact on tranquillity of:

•a natural landscape, including woodland
•rivers, streams, lakes and the sea
•birds and other wildlife
•wide open spaces
•cars, motorbikes, trains and aircraft– and roads and railways
•light pollution
•towns, cities and villages
•large numbers of people
•pylons, power lines, masts and wind turbines.

No two squares the same

Each 500m by 500m square of England has been given a tranquillity score, based on 44 different factors which add to or detract from people's feelings of tranquillity. These scores have been colour coded – darkest green for those places most likely to make people feel tranquil, brightest red for those least likely. But squares that are the same colour and have the same score may differ markedly in the different 'components' of tranquillity – both positive and negative – which determine their overall score.

3.3 National versus Local Tranquillity

The national tranquillity model identifies, on a relative scale, the tranquillity of each 500x500m square within the national map grid, based on a desk study score. That score is measured from nationally available datasets and compared to other scores within the minimum and maximum range of data values for England. However, local areas of tranquillity, especially in urban fringe areas, may be 'vital sanctuaries' for urban residents and may offer a 'sense of wilderness' relative to their setting. In raw and national terms, they may have a low tranquillity score, but when considered in their local to regional context, they have real significance for a great many people. Such local or regional areas will not, however, be as apparent on a national scale.

In December 2007, the Cranborne Chase and West Wiltshire Downs AONB was sent a spreadsheet with tranquillity scores cut to the AONB boundary. The spreadsheet supplied to the AONB enables the identification of local patterns and trends, which might not be so obvious using data on a national scale.

The methodology used by Northumbria University offers two potential approaches to providing a solution for more localised tranquillity data:

(i) a simple cartographic device where only the maximum and minimum data for a region are displayed; this stretches the tranquillity scale and the gradation of tranquillity becomes clearer;

(ii) the GIS model can be rerun on a regional basis only; this means raw data for a specific region is used before reclassing on a scale of 0-10; the boundaries for reclassing will differ from the national GIS Model.

Generating a tranquillity map on a regionally relative scale is **most appropriate** for modelling regional tranquillity, and, therefore data option ii was applied to the data cut to the AONB boundary.

3.4 What is the Ground Truthing trying to establish?

The Ground Truthing project simply aims to enhance the understanding of the tranquillity factors in relation to the specific areas covered by individual squares. Put another way, it seeks to establish how accurately the tranquillity assessments derived remotely from national datasets reflect the actual situations.

It also seeks to identify ways in which tranquillity in parts of this AONB differs from other parts, and to see if there are any improvements that can be made to the methodology at a local scale.

The Ground Truthing exercise takes into account the fact that the results of the model should not be used without an understanding of the methodology and its caveats. In particular, the figure for each individual cell should not be taken and interpreted out of context. This is because two or more cells with the same net value can have different combinations of the 44 potential option choices resulting in the same figure or raw scores of tranquillity - i.e. identical scores do not equate to identical environmental factors on the ground.

The Ground Truthing work does not seek to discredit or replace the recorded score supplied to the AONB.

In this report, ***Recorded*** data applies to that supplied from Northumbria and Newcastle, and ***Surveyed*** data relates to information gathered by AONB Staff and Surveyors.

3.5 Overview of What We Did

- Obtained National & AONB 'cut' data
- Plotted tranquillity scores – converted to colours for both datasets onto GIS maps
- Visual comparison of topographic maps with tranquillity maps to judge where 'hotspots' of high and low tranquillity occur.
- Devised a method for measuring 'On Site' tranquillity.
- Carried out a Pilot exercise recording tranquillity and comparing with the national datasets
- Preliminary reports of the Pilot Exercise – 'Ground Truthing'
- Ground Truthing fieldwork
- Analysis and comparison of Ground Truthing data

4 The Pilot Exercise

Between October 2008 and January 2009, a pilot 'Ground Truthing' exercise was initiated by Harry Bell (GIS Consultant, Jubilee Computing Services) and Vicki White. The field exercise was carried out by Vicki and a CPRE volunteer. This was extremely useful in providing further insights into the recorded data, and setting up the pro forma for a further, more comprehensive study.

Survey Locations

The initial pilot work looked at 9 different locations (500x500m squares). In order to find out whether the methodology yielded similar results for different people at the same location, four of the sites were surveyed by two different people. This gave a total of 13 site records.

The locations chosen for the pilot exercise were based on their tranquillity scores. 6 of the 9 sites had tranquillity scores which tended towards the maximum or minimum (+40 or -40), and 3 of the sites had intermediate scores closer to zero. This was done for the pilot as an initial check to make it easier to establish whether the ground truthing *surveyed* scores were similar to the *recorded* scores from Northumbria.

Results of the pilot exercise

The results of the pilot exercise were good, with a clear correlation being shown between recorded score and ground truthing **(See Appendix 1)**. It was clear, however, that the ground truthing worked best for those tranquillity scores closer to the extremes of +40 or -40. For these sites it was easier to establish a score because if the site was next to a busy road, this would clearly result in a negative score, and if it was in a remote/quieter area, this would clearly result in a more positive score.

The pilot exercise yielded two key questions:

- Whether the weightings applied to individual factors could be improved,
- Could the weightings of the surveyed scores be adjusted to reflect better the trend of the recorded scores for overall tranquillity.

The pilot exercise also highlighted pointers for any further analysis work:

- Further work would require a more detailed and clear description of what each factor means, together with basic training to enable survey staff to record their findings more effectively.

Particular issues; weightings applied to individual factors

Positive Tranquillity: Within the data, two factors came to light as having slightly odd weightings – these were 'Seeing – the stars at night' and 'Hearing – Water'. The surveyors reported that it was very difficult at daytime to score whether or not stars would be visible from a certain location. Similarly, they found that unless the water source was particularly large, or you were right next to it, it was difficult to hear.

In the recorded data, seeing the stars at night is given a percentage weighting of 3.03 (fifth highest) and being able to hear water given a percentage weighting of 2.23. These two topics, one not easy to record, and the other only effective over a short distance, can be causes of differences between recorded and surveyed tranquillity scores.

Negative Tranquillity: Again, some factors were listed as being difficult to score – these were 'Seeing – Overhead light pollution (night-time)', 3.34 (with the fourth highest weighting factor). Also, it was

questioned as to whether seeing coniferous woodland should actually be a negative factor (0.21% weighting).

Analysis of the recorded data shows that there are many squares within the AONB to which these problematic weightings are applied and may, therefore, contribute to differences between recorded and surveyed scores.

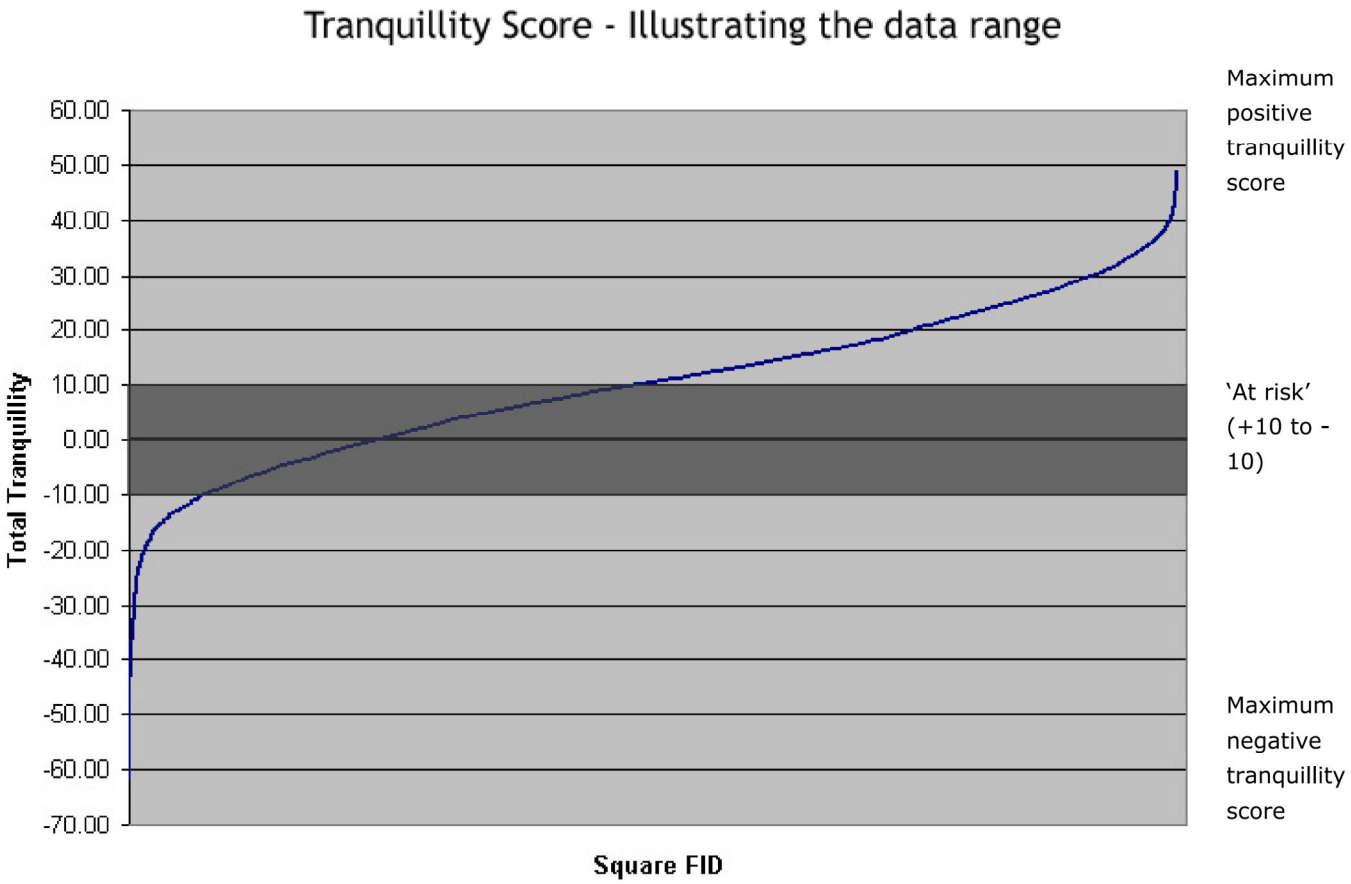
5 Ground Truthing Methodology

5.1 How were the locations chosen?

Based on the pilot exercise, it became apparent that it is easiest to obtain a direct comparison between the model and the real world in those areas where tranquillity scores were either very high or very low.
It is more difficult to match up model data with ground truthing scores where the tranquillity scores are closer to zero, on the cusp between positive and negative. However, these scores are in the squares where there is most risk from positive scores dropping into negative scores, and already slightly negative scores dropping further – therefore, these are the most 'at risk' areas.

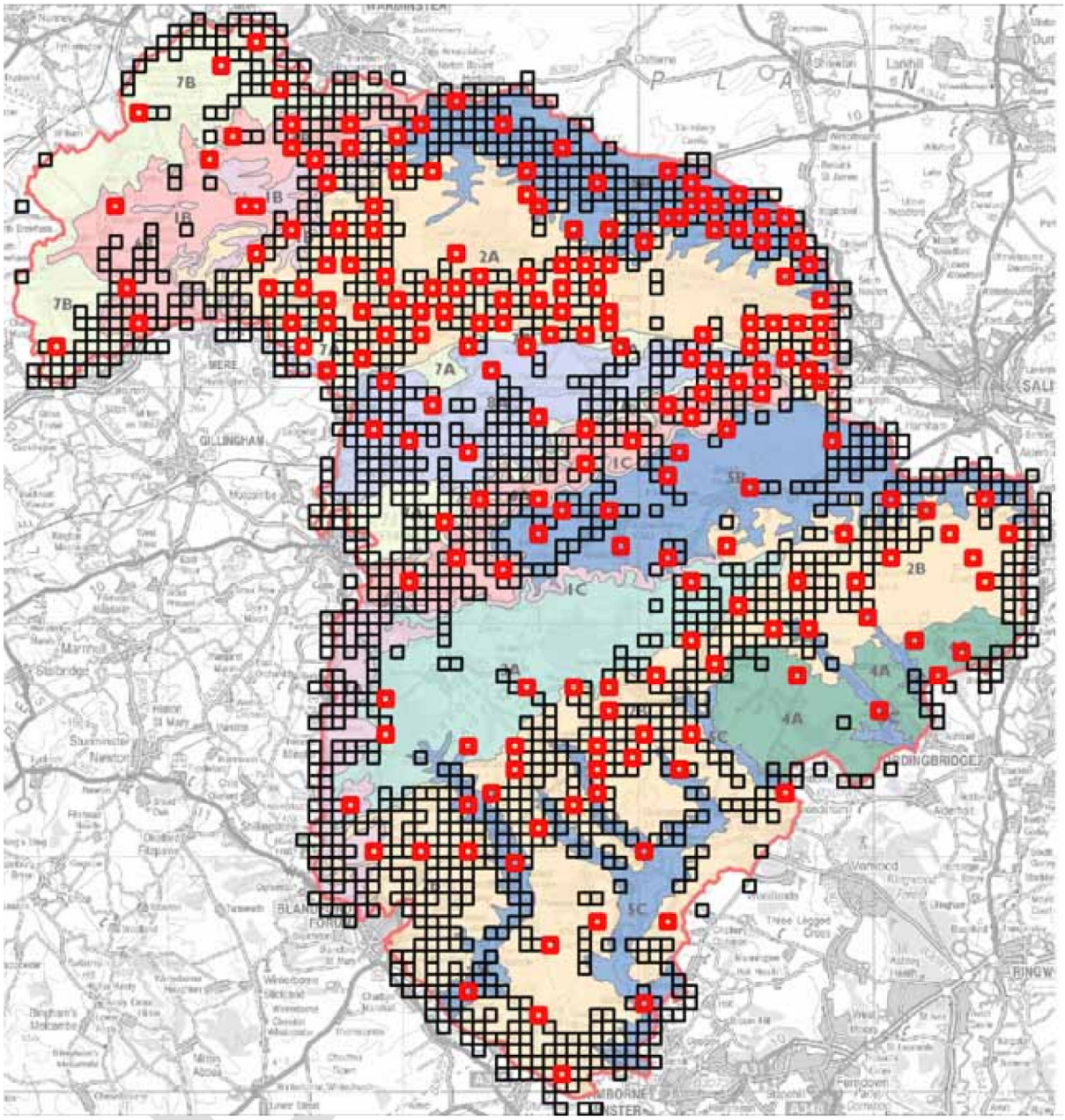
The ground truthing survey therefore concentrated on these 'at risk' areas.

The chart below shows all of the total tranquillity scores for the AONB. The data was sorted by total tranquillity score, and the curve shows the distribution of the data. It is clear that the AONB has more positive tranquillity squares than negative tranquillity squares. Those squares falling within the 'at risk' (+10 to -10 total tranquillity score) area are highlighted in a darker shade, and these squares were extracted for use in the study.



• **Figure 3 -** Tranquillity scores – illustrating data range

These squares were then mapped on the GIS. The map below shows all of the squares in the +10 to -10 'total tranquillity score' category, with those squares earmarked for surveying marked in red:



• **Figure 4 –** Landscape Character Areas

Showing the locations of the +10 to -10 total tranquillity squares overlaid on top of Landscape Character Areas. The survey locations are shown in red.

Landscape Character Areas

Landscape character is a key attribute of the AONB, so as far as possible, target squares for investigation were selected within each Landscape Character Area. This would help identify whether there is any correlation between tranquillity and particular Landscape Character Areas. However, as some Landscape Character Areas are associated with high net tranquillity scores, very few 'at risk' squares fall within them. Nevertheless, an attempt was made to spread the ground truthing work as equally as possible across all of the Character Areas.

The rights of way map was added as a reference layer when selecting the squares, to try and minimise the difficulty in reaching the centre of the square.

What was analysed?

In order to enable comparisons with the CPRE Recorded data to be as accurate as possible, the ground truthing survey work investigates the same factors as the original data. These are split into two distinct categories of Positive and Negative factors, as shown below:

POSITIVE FACTORS	NEGATIVE FACTORS
Seeing:	**Seeing:**
a Wild Landscape	Urban Development
Remote Landscapes	Towns and Cities
Wide Open Spaces	Villages and Scattered Houses
a Natural Landscape	Roads
Trees in the Landscape	Railways
Deciduous Trees	Power Lines
Natural Looking Woodland	Any Signs of Human Impact
Water	Anyone at All
the Stars at Night	Wind Turbines
	Low Flying Aircraft
Hearing:	Overhead Pollution
Water	Coniferous Trees
Low Noise Area	
	Hearing:
	Occasional Noises from Cars and Lorries
	Constant Noise from Cars and Lorries
	Railways and Trains
	Low Flying Aircraft
	Non-natural Sounds
	Seeing and Hearing:
	Lots of People
	High Altitude Aircraft

5.2 Ground Truthing Surveyors

There were five ground truthing surveyors available to carry out the research. This work was carried out between March and April 2009.

Carrying out the research

The surveyors were each asked to assess the tranquillity for a set of squares. Based on a standard 7.5 hour day, it was calculated that it would be possible to visit 12 sites (15-20 mins per site) in a day. This allows for travel time between sites, and input of the data in a spreadsheet on return home.
(See Appendix 3 for a sample spreadsheet)

The surveyors were briefed in the office as to the exact requirements for the work, and were also given a pack of instructions and guidance notes. It was stressed how important it was to get as close to the centre of each square as safely as possible (without trespassing on private land), and to try to assess the tranquillity for the square as a whole, and not just the immediate locality. For example, if a surveyor were to park on a road with hedges each side, there might not be any evidence of a 'Natural Landscape'. However, if one was to peer through the hedge, there may be wide ranging natural views.

The allocation of squares also allowed for more than one person to visit some of the squares at different times of the day. This was an experiment to see if there was any significant personal bias between the surveyors, and also if there were any distinct patterns relating to a particular time of day.

The main points to consider were:

- To try and assess the tranquillity of the square from a safe and public place.
- To try and position themselves as to give a good chance for landscape to be viewed - i.e. not behind a hedge.
- To record the start time on the questionnaire.
- To spend 15 minutes at each square in order to get a good feel for the square, recording perceptions onto the questionnaire.
- To use the 'guide to tranquillity terminology' help sheet to assist fully understanding what each factor means.
- To add any additional feeling and/or observations on the sheet.
- To record the leaving time.

A considerable amount of training was given to all of the ground truthing staff before they were to carry out the surveying. This was highlighted as necessary during the pilot exercise. Although all survey work is, by its nature, subjective, rigorous training means that the data gathered is of far greater use as greater standardisation would be employed, thereby minimising differences in opinion.

5.3 Ground Truthing – How are locations scored?

The tranquillity scores provided to the AONB office by Northumbria and Newcastle University are complex and multi-dimensional, based upon nationally available locational data, modified with weightings derived from extensive public perception studies.

The Ground Truthing work carried out by the AONB uses a simple 'minimum', 'medium' or 'strong' scoring method, and adds a weighting factor which was developed and refined during the pilot study exercise as shown below:

Positive Tranquillity:
Min = Multiplied by 1.0
Med = Multiplied by 1.5
Strong = Multiplied by 2.0

Negative Tranquillity:
Min = Multiplied by 1.5
Med = Multiplied by 2.5
Strong = Multiplied by 3.5

It then applies the same weightings to each factor as developed by the initial methodology of Northumbria and Newcastle University.

Example – Tranquillity Square Ref 2078
'Seeing Wide Open Spaces' has a weighting of 2.15.
A ground truthing result of 'Medium' means that the score is 1.5. This score is multiplied by the spreadsheet weighting of 2.15 to give a final score of 3.225.

TRANQUILLITY SQUARE REF:	2078						
POSITIVE FACTORS					*Admin Only:*		
	No	Min	Med	Strong	Score	Weight	Final
Seeing a Wild Landscape	1				FALSE	2.12	0
Seeing Remote Landscapes		1			1	1.4	1.4
Seeing Wide Open Spaces			1		1.5	2.15	3.225
Seeing a Natural Landscape			1		1.5	6.59	9.885
Seeing Trees in the Landscape			1		1.5	1.81	2.715

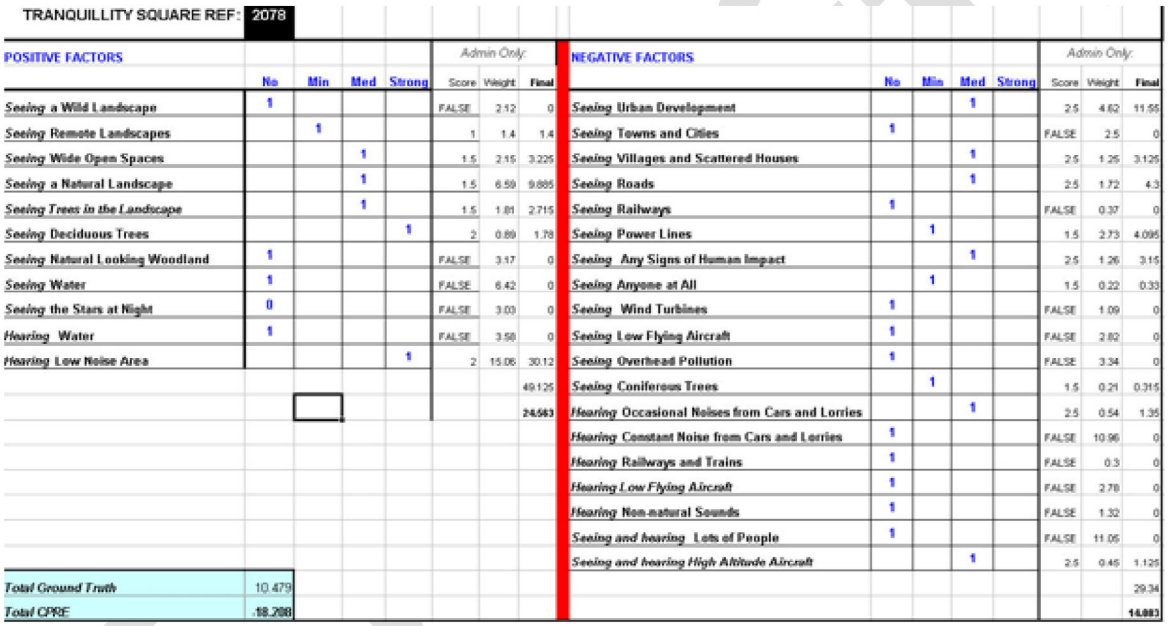
• **Figure 5** – Example of Ground Truthing weighting and final score

This method of data recording also made it quicker for the surveyors to enter their findings, as they only needed to enter a '1' for each factor. This also made the data entry less prone to errors.

Although this is a relatively crude way of determining tranquillity, it allows insights to be gained into the methodological concepts and assumptions made in the recorded data.

The surveyor training, and design of the data entry sheets also encouraged individual surveyor comments, which garner further insights into aspects of tranquillity at a local scale.

The final positive and negative tranquillity scores were generated in the 'Final' column. A final tranquillity figure for the surveyed score is calculated by subtracting negative from positive totals. A sample worksheet is shown below:



TRANQUILLITY SQUARE REF: 2078

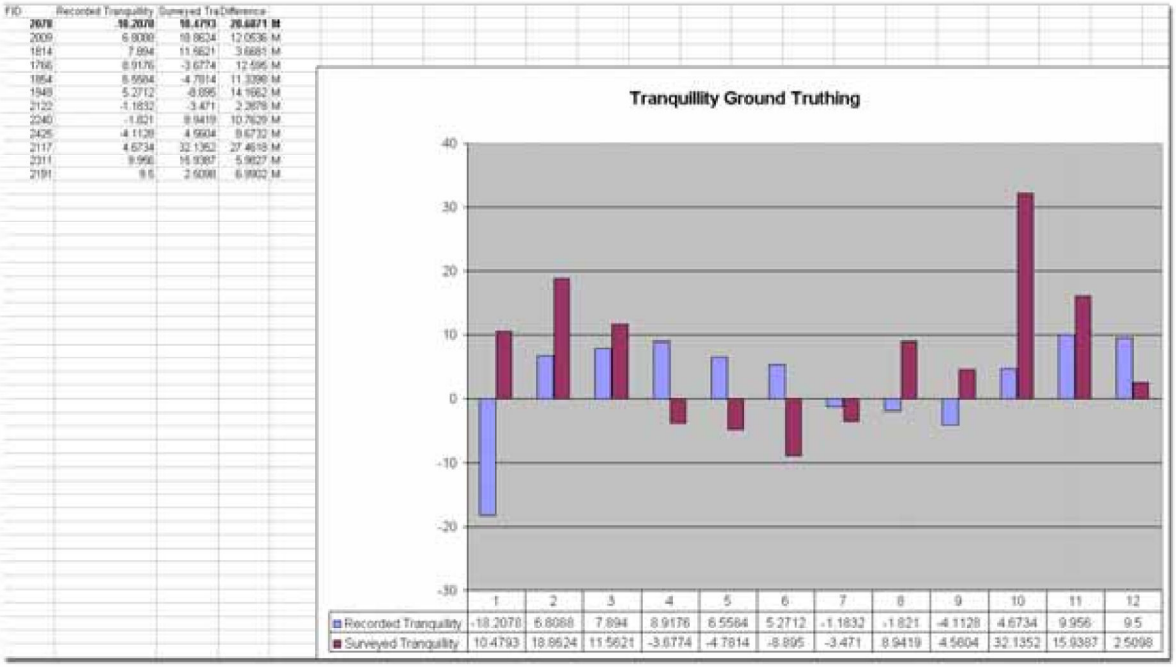
POSITIVE FACTORS	No	Min	Med	Strong	Admin Only: Score	Weight	Final
Seeing a Wild Landscape	1				FALSE	2.12	0
Seeing Remote Landscapes		1			1	1.4	1.4
Seeing Wide Open Spaces			1		1.5	2.15	3.225
Seeing a Natural Landscape			1		1.5	6.59	9.885
Seeing Trees in the Landscape			1		1.5	1.81	2.715
Seeing Deciduous Trees				1	2	0.89	1.78
Seeing Natural Looking Woodland	1				FALSE	3.17	0
Seeing Water	1				FALSE	6.42	0
Seeing the Stars at Night	0				FALSE	3.03	0
Hearing Water	1				FALSE	3.58	0
Hearing Low Noise Area				1	2	15.06	30.12
							49.125
							24.563

NEGATIVE FACTORS	No	Min	Med	Strong	Admin Only: Score	Weight	Final
Seeing Urban Development			1		2.5	4.62	11.55
Seeing Towns and Cities	1				FALSE	2.5	0
Seeing Villages and Scattered Houses			1		2.5	1.25	3.125
Seeing Roads			1		2.5	1.72	4.3
Seeing Railways	1				FALSE	0.37	0
Seeing Power Lines		1			1.5	2.73	4.095
Seeing Any Signs of Human Impact			1		2.5	1.26	3.15
Seeing Anyone at All		1			1.5	0.22	0.33
Seeing Wind Turbines	1				FALSE	1.09	0
Seeing Low Flying Aircraft	1				FALSE	2.82	0
Seeing Overhead Pollution	1				FALSE	3.34	0
Seeing Coniferous Trees		1			1.5	0.21	0.315
Hearing Occasional Noises from Cars and Lorries			1		2.5	0.54	1.35
Hearing Constant Noise from Cars and Lorries	1				FALSE	10.96	0
Hearing Railways and Trains	1				FALSE	0.3	0
Hearing Low Flying Aircraft	1				FALSE	2.78	0
Hearing Non-natural Sounds	1				FALSE	1.32	0
Seeing and hearing Lots of People	1				FALSE	11.05	0
Seeing and hearing High Altitude Aircraft			1		2.5	0.45	1.125
							29.34
							14.083

Total Ground Truth	10.479
Total CPRE	18.208

• **Figure 6** – sample whole sheet

In the bottom left hand corner, the Total Ground Truth score (**Surveyed**) is displayed alongside the Total CPRE (**Recorded**) score. This is then automatically fed into the master worksheet, the differences calculated, and a graph to show the scores for each square displayed (see figure 5).



• **Figure 7** – Master spreadsheet example showing a single day's survey results.

The master spreadsheet showing all twelve sites surveyed by a researcher in one day clearly show the differences between the surveyed and the recorded data for each square visited. In figure 5, the square 2078 is the first one in the list – the first column on the left hand side of the chart. It clearly shows the difference between the surveyed and recorded data. The Recorded score shows a negative tranquillity of around -20, whilst the surveyed score shows a tranquillity of around +10.

6 Results and Analysis

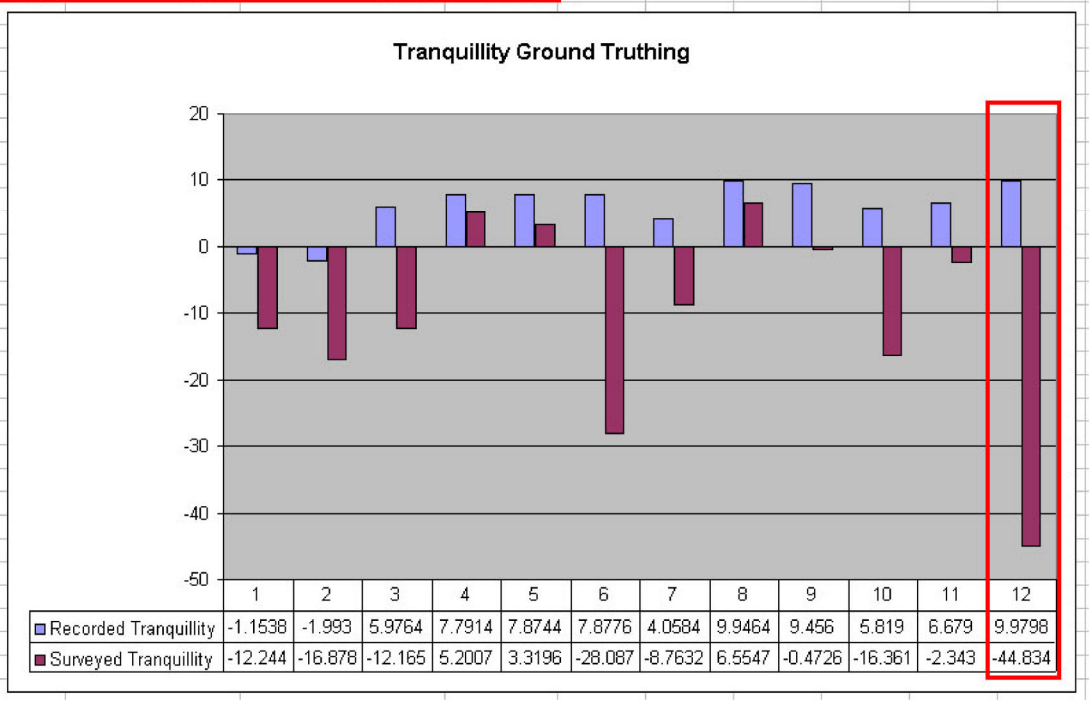
Bearing in mind the purpose of the study is to investigate how reliably the nationally derived tranquillity scores reflect the 'on the ground' situations, it was decided to examine three key areas:

- **Analysis 1 – Is there any particular surveyor bias affecting the results?**
  - **Do the surveyed & recorded data match for direction and magnitude?**
  - **Is a manipulation of the weighting factor needed to demonstrate closer 'fit'?**
- **Analysis 2 – Individual Factors - Is there a particular individual tranquillity factor which causes the greatest discrepancy between recorded and surveyed?**
- **Analysis 3 – Do the results relate to particular character areas?**

In the examination of the major differences between the two scores, it is possible to refer back to the original worksheet to see what contributes to the scores being so different, and whether there are any particular factors which seem to be causing the discrepancies.

6.1 Basic Interpretation Example – Square 2152

FID	Recorded Tranquilli	Surveyed Tranquillity	Difference	Surveyor
2684	-1.1538	-12.2439	11.0901	K
2571	-1.993	-16.8778	14.8848	K
2337	5.9764	-12.1651	18.1415	K
2351	7.7914	5.2007	2.5907	K
2469	7.8744	3.3196	4.5548	K
3227	7.8776	-28.0867	35.9643	K
3064	4.0584	-8.7632	12.8216	K
2882	9.9464	6.5547	3.3917	K
2947	9.456	-0.4726	9.9286	K
2160	5.819	-16.3607	22.1797	K
2218	6.679	-2.343	9.022	K
2152	9.9798	-44.8338	54.8136	K



• **Figure 8** – Basic Interpretation Example

For example, in the illustration above, square number 12 exhibits a very high **surveyed** negative score of minus 44.8. Examination of the Ground Truthing (**surveyed**) data shows that this is derived mainly from

the factors 'Hearing, Constant noise from cars, lorries and/or motorbikes' (38.36) and 'Seeing and Hearing lots of people (38.675).

The Recorded data - Square 2152

FID	2152			
POSITIVE TRANQUILLITY			NEGATIVE TRANQUILLITY	
Seeing, wild Landscape	0.00		Seeing, Urban Development	4.62
Seeing, Remote Landscapes	9.80		Seeing, Towns and Cities	2.50
Seeing, Wide open spaces	2.15		Seeing, Villages and Scattered Houses	0.00
Seeing, A Natural Landscape	32.95		Seeing, Roads	1.72
Seeing, Trees in the Landscape	1.81		Seeing, Railways	0.00
Seeing, Deciduous trees in the Landscape	0.89		Seeing, Power lines	0.00
Seeing, Natural Looking Woodland	3.17		Seeing, Any signs of human impact	1.26
Seeing Water	4.96		Seeing, Anyone at all	0.00
Seeing, The Stars at Night	30.30		Seeing, Wind turbines	0.00
Hearing Water	0.00		Seeing, Low flying aircraft	0.00
Hearing, Low Noise Areas	0.00		Seeing, Overhead pollution (night time)	0.00
Sum	86.03		Seeing, Coniferous woodland	0.21
Positive	43.02		Hearing, Occasional noise from cars, lorries and/or motorbikes	2.16
			Hearing, Constant noise from cars, lorries and/or motorbikes	54.80
			Hearing, Railways and Trains	0.30
			Hearing, Low flying aircraft	2.78
			Hearing, Non-natural sounds	2.64
			Seeing, and Hearing, Lots of people	0.00
			Seeing, and hearing, High Altitude aircraft	0
			Sum	72.99
			Negative	35.04
			Tranquility Score	7.98

• **Figure 9** – Recorded Data Square 2152

In the **recorded** (CPRE) tranquillity data, this square actually has a positive total tranquillity score of 7.98. For the 'Hearing, Constant noise from cars, lorries and/or motorbikes' factor, it also received a high score (54.80). However, this high total negative tranquillity score is counterbalanced by very strong positive scores for 'Seeing the Stars at Night' and 'Seeing a Natural Landscape'.

The 'Seeing the Stars at night' figure is based on 'skyglow' - defined as the brightness of the night sky as a function of distance from varying sizes of urban areas. An inverse of the dataset was used for 'Seeing, the stars at night'.

The 'Seeing a Natural Landscape' figure (Perceived Naturalness) uses the LCS2000 categorisation of land cover. Percentage of each type of vegetation is weighted by multiplying by STA score – a mean of the surrounding scores is also included to take into account context. The data is reliant on classification of vegetation of remotely sensed data at a resolution of 25m by 25m.
*(**Source:** Tranquillity Mapping Short Methodological Report Prepared by the Campaign to Protect Rural England)*

We are therefore able to postulate that were it not for the high 'Seeing Stars at Night' and 'Seeing a Natural Landscape' scores in the recorded data, the total tranquillity of the square might actually be negative, and there is a possibility that this score might be more relevant to the overall picture of tranquillity in the AONB.

The below image is the Ordnance Survey Mastermap area for square 2152:

• **Figure 10** – OS Mastermap Square 2152

6.2 Analysis 1 – Is there any particular surveyor bias affecting the results?

The first analysis is to look at the results to see if there is significant surveyor bias towards either highly positive or highly negative survey scores.

It was decided to examine the differences in surveyed and recorded scores, in particular, to see if any surveyor was scoring either especially high, or low.

The below table shows the surveyor initials in the leftmost column. The **total tranquillity** figure was used as an indicator of bias. Differences between the **recorded** and **surveyed** total tranquillity scores were used – with differences of 10 or more, and also 15 or more total tranquillity 'points' being used to help show the variations. The percentage of those sites visited by each surveyor where the differences between the recorded and surveyed figures were greater than 10, and greater than 15 are shown in the last two columns.

Surveyor	Total Sites Surveyed	Count where difference greater than 10	Count where difference greater than 15	% Gtr or less than 10	% Gtr or less than 15
A	46	24	12	**52%**	**26%**
M	96	39	23	**41%**	**24%**
K	11	8	5	**73%**	**45%**
S	24	10	7	**42%**	**29%**

6.3 Analysis 1 - Conclusions

The chart shows that K has recorded the greatest difference, followed by A, and then M. This indicates that, in general, the differences are not so great as to detract from the validity of any one particular surveyor. It also highlights the fact that as the number of sites surveyed increases, the proportions of sites where the differences are greater decreases. This indicates that the survey method has validity, and the importance of a large overall sample size to enable accurate comparisons between the ground truthing work, and the recorded data.

Despite the overall confidence in the surveyed data, there are still substantial variations by all surveyors from the recorded levels. Further investigation is required to see if there are re-occurring patterns in these discrepancies (see Analysis 2).

6.4 Analysis 2 – Individual Factors - Is there a particular individual factor which causes the greatest discrepancy between recorded and surveyed scores?

Is there a particular individual factor which causes the greatest discrepancy between recorded and surveyed?

Due to the quantity of data, 5 sample points were examined. Sites were chosen where the differences in recorded and surveyed total tranquillity scores were the greatest (these squares are listed below). This would then enable examination of the individual factors in the recorded data to highlight the main factors influencing the score.

Different surveyors were also chosen, in an attempt to eliminate any surveyor bias. For further clarification of the factors, please see **Appendix 4** – Surveyors Guidance Notes.

Squares where the differences between recorded and surveyed totals were greatest:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences	Surveyor	Surveyor Description
2152	7.98	-44.8338	**52.8138**	K	"Gentle rolling Countryside"
3227	7.8776	-28.0867	**35.9643**	K	
50	5.8568	-29.7918	**35.6486**	A	"Mixed agricultural, cattle & horses. A362 dominates visually and aurally. Scattered settlements"
1077	8.3848	-25.4506	**33.8354**	M	"Shallow dip between large undulating fields. Areas of scattered copse"
3358	1.5224	29.5144	**27.992**	S	

The factors for each square investigated are shown in the following tables.

Square No.2152 – Surveyor K

Tranquillity Factor	Recorded	Surveyed
Seeing a Wild Landscape	0.00	0
Seeing Remote Landscapes	9.80	0
Seeing Wide Open Spaces	2.15	3.225
Seeing a Natural Landscape	32.95	0
Seeing Trees in the Landscape	1.81	1.81
Seeing Deciduous Trees	0.89	0.89
Seeing Natural Looking Woodland	3.17	0
Seeing Water	4.96	0
Seeing the Stars at Night	30.30	4.545
Hearing Water	0.00	0
Hearing Low Noise Area	0.00	0
Total	86.03	10.47
Total Weighted	**43.02**	**5.235**
Seeing Urban Development	4.62	0
Seeing Towns and Cities	2.5	3.75
Seeing Villages and Scattered Houses	0	3.125
Seeing Roads	1.72	4.3
Seeing Railways	0	0
Seeing Power Lines	0	4.095
Seeing Any Signs of Human Impact	1.26	4.41
Seeing Anyone at All	0	0.77
Seeing Wind Turbines	0	0
Seeing Low Flying Aircraft	0	0
Seeing Overhead Pollution	0	0
Seeing Coniferous Trees	0.21	0.315
Hearing Occasional Noises from Cars and Lorries	2.16	1.89
Hearing Constant Noise from Cars and Lorries	54.8	38.36
Hearing Railways and Trains	0.3	0
Hearing Low Flying Aircraft	2.78	0
Hearing Non-natural Sounds	2.64	4.62
Seeing and hearing Lots of People	0	38.675
Seeing and hearing High Altitude Aircraft	0	0
Total	72.99	104.31
Total Weighted	**35.0352**	**50.0688**
Total Tranquillity	**7.98**	**-44.8338**
Total Difference:		**52.81**

POSITIVE

NEGATIVE

Square No. 3227 – Surveyor K

Tranquillity Factor	Recorded	Surveyed
Seeing a Wild Landscape	0.00	0
Seeing Remote Landscapes	0.00	0
Seeing Wide Open Spaces	2.15	0
Seeing a Natural Landscape	26.36	0
Seeing Trees in the Landscape	1.81	2.715
Seeing Deciduous Trees	0.89	1.78
Seeing Natural Looking Woodland	3.17	0
Seeing Water	4.96	0
Seeing the Stars at Night	30.30	3.03
Hearing Water	0.00	0
Hearing Low Noise Area	0.00	15.06
Total	69.64	22.585
Total Weighted	**34.82**	**11.2925**
Seeing Urban Development	4.62	11.55
Seeing Towns and Cities	0	0
Seeing Villages and Scattered Houses	0.06	4.375
Seeing Roads	1.72	6.02
Seeing Railways	0	0
Seeing Power Lines	2.73	6.825
Seeing Any Signs of Human Impact	1.26	3.15
Seeing Anyone at All	0.66	0.55
Seeing Wind Turbines	0	0
Seeing Low Flying Aircraft	0	0
Seeing Overhead Pollution	0	0
Seeing Coniferous Trees	0.21	0.315
Hearing Occasional Noises from Cars and Lorries	2.16	1.89
Hearing Constant Noise from Cars and Lorries	0	16.44
Hearing Railways and Trains	0	0
Hearing Low Flying Aircraft	5.56	0
Hearing Non-natural Sounds	0	3.3
Seeing and hearing Lots of People	33.15	27.625
Seeing and hearing High Altitude Aircraft	4	0
Total	56.13	82.04
Total Weighted	**26.9424**	**39.3792**
Total Tranquillity	**7.88**	**-28.0867**
Total Difference:		**35.96**

POSITIVE

NEGATIVE

Square No.50 – Surveyor A

Tranquillity Factor	Recorded	Surveyed
Seeing a Wild Landscape	0.00	0
Seeing Remote Landscapes	0.00	0
Seeing Wide Open Spaces	2.15	0
Seeing a Natural Landscape	32.95	0
Seeing Trees in the Landscape	3.62	2.715
Seeing Deciduous Trees	1.78	1.335
Seeing Natural Looking Woodland	6.34	0
Seeing Water	6.42	0
Seeing the Stars at Night	30.30	0
Hearing Water	0.00	0
Hearing Low Noise Area	0.00	0
Total	83.56	4.05
Total Weighted	**41.78**	**2.025**
Seeing Urban Development	4.62	0
Seeing Towns and Cities	2.5	0
Seeing Villages and Scattered Houses	0	1.875
Seeing Roads	1.72	2.58
Seeing Railways	0.37	0
Seeing Power Lines	2.73	0
Seeing Any Signs of Human Impact	1.26	1.89
Seeing Anyone at All	0.22	0
Seeing Wind Turbines	0	0
Seeing Low Flying Aircraft	0	9.87
Seeing Overhead Pollution	0	0
Seeing Coniferous Trees	0.21	0
Hearing Occasional Noises from Cars and Lorries	1.62	0
Hearing Constant Noise from Cars and Lorries	43.84	38.36
Hearing Railways and Trains	0.6	0
Hearing Low Flying Aircraft	2.78	9.73
Hearing Non-natural Sounds	1.32	1.98
Seeing and hearing Lots of People	11.05	0
Seeing and hearing High Altitude Aircraft	0	0
Total	74.84	66.285
Total Weighted	**35.9232**	**31.8168**
Total Tranquillity	**5.86**	**-29.7918**
Total Difference:		**35.65**

POSITIVE

NEGATIVE

Point 1077 – Surveyor M

Tranquillity Factor	Recorded	Surveyed	
Seeing a Wild Landscape	0.00	0	
Seeing Remote Landscapes	14.00	2.1	
Seeing Wide Open Spaces	2.15	3.225	
Seeing a Natural Landscape	26.36	0	
Seeing Trees in the Landscape	1.81	1.81	
Seeing Deciduous Trees	0.89	1.335	
Seeing Natural Looking Woodland	3.17	0	
Seeing Water	0.00	0	
Seeing the Stars at Night	30.30	0	
Hearing Water	0.00	0	
Hearing Low Noise Area	0.00	30.12	
Total	78.68	38.59	
Total Weighted	**39.34**	**19.295**	
Seeing Urban Development	0	11.55	
Seeing Towns and Cities	0	0	
Seeing Villages and Scattered Houses	0	0	
Seeing Roads	1.72	6.02	
Seeing Railways	0	0	
Seeing Power Lines	0	0	
Seeing Any Signs of Human Impact	1.26	3.15	
Seeing Anyone at All	0	0.55	
Seeing Wind Turbines	0	0	
Seeing Low Flying Aircraft	0	7.05	
Seeing Overhead Pollution	0	0	
Seeing Coniferous Trees	0.21	0	
Hearing Occasional Noises from Cars and Lorries	1.08	1.89	
Hearing Constant Noise from Cars and Lorries	54.8	38.36	
Hearing Railways and Trains	0	0	
Hearing Low Flying Aircraft	2.78	6.95	
Hearing Non-natural Sounds	2.64	0	
Seeing and hearing Lots of People	0	16.575	
Seeing and hearing High Altitude Aircraft	0	1.125	
Total	64.49	93.22	
Total Weighted	**30.9552**	**44.7456**	
Total Tranquillity	**8.38**	**-25.451**	
Total Difference:		**33.83**	

POSITIVE

NEGATIVE

Point 3358 – Surveyor S

Tranquillity Factor	Recorded	Surveyed	
Seeing a Wild Landscape	0.00	0	
Seeing Remote Landscapes	0.00	2.8	
Seeing Wide Open Spaces	2.15	4.3	
Seeing a Natural Landscape	26.36	9.885	
Seeing Trees in the Landscape	1.81	3.62	
Seeing Deciduous Trees	0.89	1.78	
Seeing Natural Looking Woodland	3.17	4.755	
Seeing Water	4.96	0	
Seeing the Stars at Night	30.30	6.06	POSITIVE
Hearing Water	0.00	0	
Hearing Low Noise Area	0.00	30.12	
Total	69.64	63.32	
Total Weighted	**34.82**	**31.66**	
Seeing Urban Development	0	0	
Seeing Towns and Cities	0	0	
Seeing Villages and Scattered Houses	0	0	
Seeing Roads	1.72	2.58	
Seeing Railways	0	0	
Seeing Power Lines	2.73	0	
Seeing Any Signs of Human Impact	1.26	1.89	
Seeing Anyone at All	0.66	0	
Seeing Wind Turbines	0	0	
Seeing Low Flying Aircraft	0	0	
Seeing Overhead Pollution	0	0	
Seeing Coniferous Trees	0.21	0	NEGATIVE
Hearing Occasional Noises from Cars and Lorries	2.16	0	
Hearing Constant Noise from Cars and Lorries	21.92	0	
Hearing Railways and Trains	0	0	
Hearing Low Flying Aircraft	5.56	0	
Hearing Non-natural Sounds	0	0	
Seeing and hearing Lots of People	33.15	0	
Seeing and hearing High Altitude Aircraft	0	0	
Total	69.37	4.47	
Total Weighted	33.2976	**2.1456**	
Total Tranquillity	**1.5224**	**29.514**	
Total Difference:		**27.99**	

6.5 Analysis 2 – Conclusions

Most notable discrepancies – Recorded data

The most notable factors which can be highlighted in every one of the sample squares for the Recorded data are **'Seeing a Natural Landscape'** and **'Seeing - the stars at night'**.

Other factors with significant discrepancies

Positive Factors

Surveyed

For the surveyed figures, **'Hearing Low Noise Areas'** occurs three times as the highest score.

Negative Factors

Surveyed

For the surveyed figures there is no clear repetition of discrepancies between particular factors

Recorded

Relatively high scores are from **'Seeing and Hearing Lots of People'** and **'Hearing Constant Noise from Cars and Lorries'**.

Similar to the results of the pilot exercise, the **recorded** (CPRE) tranquillity data exhibits certain tranquillity themes which seem to have slightly odd weightings – these were 'Seeing a Natural Landscape' and 'Seeing – the stars at night'.

In terms of 'Seeing – the stars at night' the surveyors reported that it was very difficult to score the 'Seeing the Stars at Night' factor – mainly because the surveying was being carried out in the daytime. This was despite the fact that during the briefing, surveyors were asked to estimate whether (assuming clear skies) the stars would be visible at night.

Similarly, the surveyors found that the 'Seeing a Natural Landscape' figure was often offset by the presence of power lines, communication masts, nearby villages or farm buildings. The fact that it would be difficult to include the presence of these minor landscape features in a national dataset might go some way to explaining why this factor in the recorded data scored consistently higher than in the surveyed data.

For the recorded data, 'Hearing Constant Noise from Cars and Lorries' is a consistently high scoring theme. This pattern is repeated in the surveyed data where the theme also scores highly.

Further analysis of the theme 'Seeing and Hearing lots of people' indicates that perhaps the figure should not be as high as it is. For example, for square 3358 it is the highest negative factor, yet scores zero for the surveyed data. OS mapping for the square indicates it is relatively remote (see appendix X).
It is therefore difficult to see why this square should have such a high negative **recorded** score for 'Seeing and Hearing Lots of People'.
It seems that the opposite starts to occur for point 2152, where the recorded score is zero, and the surveyed score is 38.67. From the OS map, it is apparent that in this square there are several dwellings

and a farm present in the square itself. In addition, the village of Coombe Bissett is roughly 500m from the centre of the square. So it would seem as if the surveyed figure were a more accurate assessment.

It is stated in the Tranquillity Methodology that:
'Obtaining figures for noise associated with the presence of people, number, age for all sites where people are likely to be, honey pot sites, are outside the capacity of this project. Instead data generated for the option choice 'seeing, lots of people' will be used as a relative indicator of presence and absence.'
(Tranquillity Mapping Short Methodological Report, Prepared by the Campaign to Protect Rural England)
It does therefore seem slightly strange that the 'seeing and hearing lots of people' figure is zero considering the proximity of the dwellings, farm and nearby village.

It is worth noting the occurrence of 'Hearing – Low flying aircraft' and 'Hearing – Non-Natural Sounds' for the negative factors. These have a low weighting value and therefore do not score highly overall, but do appear consistently. The non-natural sounds values apply to sounds such as distant artillery, and the low flying aircraft include military helicopters and jets; reflecting the proximity to Salisbury Plain. Other non-natural sounds which were prevalent were described by surveyors as being made by automatic detonations of crow-scarers, tractors and farm machinery and lawnmowers in distant villages.

Also of note is the, 'Seeing Natural Looking Woodland' and 'Seeing water' – although a low score, is predominantly higher for the recorded data.

Consistency

Rather than there being any discrepancy, there is a positive correlation between many of the recorded and surveyed figures, particularly for 'Hearing Constant Noise from Cars and Lorries'.
Other factors which display these similar characteristics are listed below:

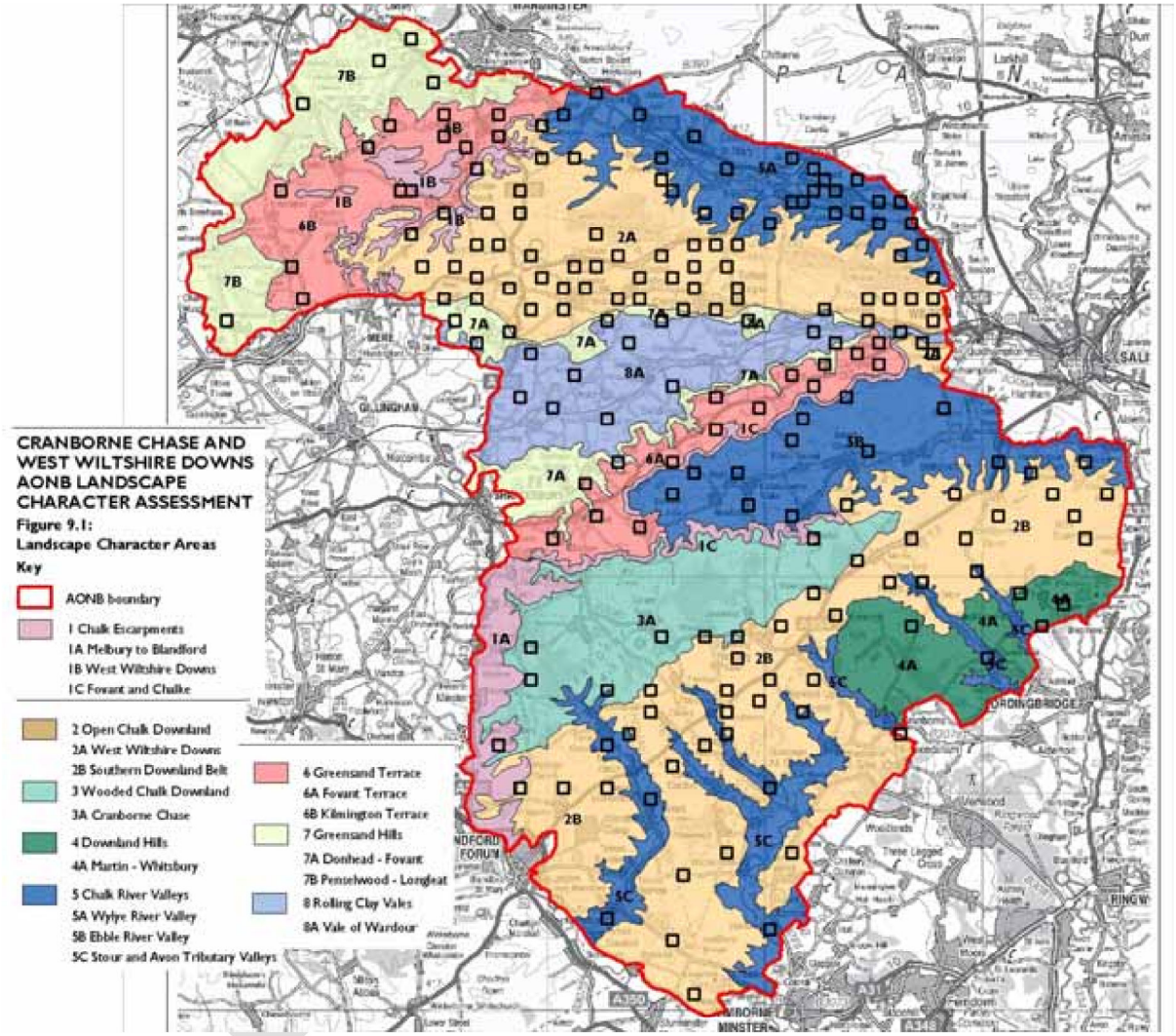
- Seeing a Wild Landscape
- Seeing a Remote Landscape
- Seeing Wide Open Spaces
- Seeing Trees in the Landscape **POSITIVE**
- Seeing Deciduous trees
- Hearing Water

- Seeing Towns and Cities
- Seeing Villages and Scattered Houses
- Seeing Roads (always higher in surveyed)
- Seeing Railways
- Seeing Any Signs of Human Impact
- Seeing Wind Turbines **NEGATIVE**
- Seeing Overhead Pollution
- Hearing Occasional Noises from Cars and Lorries
- Hearing Railways and Trains
- Seeing and hearing High Altitude Aircraft

6.6 Analysis 3 – Do the results relate to particular character areas?

In 1995 and 2003 the Countryside Agency commissioned landscape assessments of Cranborne Chase and West Wiltshire Downs AONB. These were undertaken by Land Use Consultants.

The Landscape Character Areas are shown below, along with the survey squares (squares falling in the +10 to -10 category). By grouping the survey results by Character Area, it should be possible to see if there are any patterns which reflect the individual character of each area.



• **Figure 11** – Landscape Character Map

TYPE 1: CHALK ESCARPMENTS – 5% of AONB

6.6.1.1 Description

The escarpments, which often mark the transition between chalk and adjoining rocks, are amongst the most dramatic elements of the chalk landscape. These are large scale landscapes where repeating patterns of rounded spurs and deep combes cast strong shadows in strong sunlight. The scarps frequently support

internationally important nature conservation sites and ancient field systems, some which are still dramatic features of the landscape today. Recreational opportunities are mainly limited to public footpaths, although the scarps contain large areas of `Open Country'.

6.6.1.2 Key Characteristics

• Dramatic chalk escarpments eroded into rounded spurs and deep combes.
• Underlying geology of Lower, Middle and Upper Chalk giving rise to the predominantly calcareous soils.
• Areas of unimproved chalk grassland of international importance on steeper slopes.
• Field systems on the lower slopes, including strip lynchets close to medieval villages sited along the springline.
• Improved pasture and arable fields occupy the shallower, more accessible, slopes where straight-sided fields represent late 18th/early 19th century Parliamentary inclosure.
• Hanging woodland and sunken lanes are features of the steep, enclosing chalk combes.
• Panoramic views over adjacent landscapes.

Recorded Squares:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences
3591	9.3448	23.1084	13.7636
478	8.538	7.5629	0.9751

TYPE 2: OPEN CHALK DOWNLAND – 36% of AONB

6.6.1.3 Description

Two large tracts of open chalk downland, divided by the Vale of Wardour, account for a large proportion of the AONB area. Unlike the escarpments, the chalk downs have a much more subdued landform of gently rolling spurs and dry valleys. Only where these valleys come close to an escarpment do they deepen to create convoluted, dividing valley systems. In geological terms, the open downs comprise the dip-slope of the chalk; a gently inclined landform representing the original chalk 'surface'.
These uninterrupted rolling hills and gentle slopes give a real sense of openness. The land is now predominantly under arable fields but with areas of chalk grassland surviving. Open Chalk Downland occurs in two extensive areas making it the most significant landscape type in terms of area covered.

6.6.1.4 Key Characteristics

• Large-scale landform of broad rolling hills intercepted by a dry river valley.
• Dominated by an Upper Chalk surface geology with drift clay with flints capping on higher ground.
• A predominantly arable landscape divided into large, regular field units with straight-sided fields representing late 18th/early 19th century Parliamentary inclosure.
• Remnant chalk grassland, ancient broadleaved woodland and Yew woodland are important habitats.
• Main roads cut across the undulating landscape linking major settlements on either side of the AONB.
• Large open skies and distant panoramic views.
• Low density scattered settlement of farmsteads and the occasional downland village.
• Numerous Neolithic burial and ritual monuments and Bronze Age Barrows.
• Later prehistoric and Romano-British ditches and defensive earthworks.

Recorded Squares:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences

1077	8.3848	-25.4506	33.8354
557	9.5912	-21.7308	31.322
609	6.1612	-21.6616	27.8228
1090	7.916	-15.8589	23.7749
1243	-6.0546	15.3999	21.4545
1021	6.0324	-14.3749	20.4073
484	0.6556	20.4405	19.7849
734	-3.5736	16.153	19.7266
1025	8.2318	-11.3184	19.5502
2986	-9.5256	9.7726	19.2982
2337	5.9764	-12.1651	18.1415
1226	-0.9924	-18.316	17.3236
1585	-9.3632	6.5603	15.9235
1151	-17.5748	-33.3064	15.7316
2571	-1.993	-16.8778	14.8848
1293	-1.3448	13.3219	14.6667
3774	-4.7992	-19.0344	14.2352
1641	5.3	19.5315	14.2315
961	7.3756	-6.0943	13.4699
3610	-4.8278	8.5856	13.4134
1169	-4.878	-17.9127	13.0347
1371	8.832	-3.9797	12.8117
939	3.8312	-8.7779	12.6091
1388	2.5102	14.3532	11.843
2684	-1.1538	-12.2439	11.0901
1013	-9.468	-20.4615	10.9935
423	-2.044	7.9159	9.9599
1233	-0.6738	-9.7635	9.0897
1193	0.0344	-8.9837	9.0181
1157	-9.9528	-1.0176	8.9352
3092	-6.1506	2.3703	8.5209
1332	-4.0056	4.4868	8.4924
3464	15.3464	6.9881	8.3583
937	7.5048	15.8208	8.316
1385	7.0424	14.9915	7.9491
1338	9.0078	1.2979	7.7099
1296	8.9576	1.8987	7.0589
3471	-4.0988	2.4081	6.5069
737	-1.5548	-7.6542	6.0994
1465	-4.4344	1.0125	5.4469
1247	9.1112	3.9274	5.1838
862	1.9208	6.9192	4.9984
1334	-2.188	2.5834	4.7714
2469	7.8744	3.3196	4.5548
1102	0.891	-3.5896	4.4806
754	8.254	3.9286	4.3254
957	0.9246	-3.0192	3.9438
1471	6.2258	2.4503	3.7755
2389	9.3068	12.7496	3.4428

1320	-0.8904	2.1026	2.993
3694	0.5742	-2.1083	2.6825
2351	7.7914	5.2007	2.5907
1099	-0.924	1.5754	2.4994
1374	5.8066	3.3924	2.4142
959	0.4062	-1.644	2.0502
1309	-8.861	-7.1689	1.6921
1311	1.7816	3.202	1.4204
1336	4.6734	5.7456	1.0722
730	9.5768	10.3588	0.782
1231	-3.2388	-3.6451	0.4063
1166	-4.1128	-3.7509	0.3619
1074	8.5932	8.9331	0.3399
1088	-4.1778	-4.4687	0.2909
265	-6.7456	-6.5417	0.2039
3315	-5.5122	-5.6951	0.1829
2863	8.9052	9.0624	0.1572

TYPE 3: WOODED CHALK DOWNLAND – 8% of AONB

6.6.1.5 Description

The wooded chalk downland landscape type is similar to the open chalk downland landscape type in terms of its underlying geology, elevation, hydrology and early history. The most distinguishing feature is its woodland cover which is present in the form of large woods, shelter belts, copses, and clumps creating a series of enclosed spaces or 'rooms' surrounded by trees. This creates a downland mosaic of woodland, grassland and arable land that wraps around the steeply undulating landscape of upstanding chalk ridges and deeply incised combes.

6.6.1.6 Key Characteristics

• An elevated downland landscape with dramatic intersecting combe valleys and rounded upstanding ridges.
• Dominated by an Upper Chalk surface geology with drift clay with flints capping higher ground.
• A well wooded landscape with large woods, shelter belts, copses, and clumps creating a series of enclosed spaces or 'rooms' surrounded by trees.
• Mosaic of unenclosed downland, improved grassland and arable fields, dating from 19th century inclosure, between the woodland.
• Chalk grassland and ancient woodland provide important nature conservation habitats.
• Typically low density, scattered settlement of individual farmsteads with the occasional downland village or Medieval hunting lodge.
• Visible archaeological features including Neolithic long barrows, Bronze Age round barrows, prehistoric to Romano-British earthworks and field systems.
• Panoramic views from upstanding chalk ridges to adjacent ridges and into valleys/combes.

Recorded Squares:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences
3095	8.282	6.5264	1.7556

TYPE 4: DOWNLAND HILLS – 4.5% of AONB

6.6.1.7 Description

The Downland Hills are formed from the dissected remnants of an older chalk escarpment. Over the millennia, the rivers which once drained the chalk dipslope of the AONB have cut through eroding the remnants of the escarpment into a series of rounded bluffs. These appear as a series of low `whale-backed' ridges that stand out from the surrounding downland. The highest hill tops tend to be capped with clay with flints and small areas of Reading Beds. Ploughed slopes and enlarged fields create a vast patchwork of arable land with isolated remnants of chalk grassland and ancient semi-natural woodland.

6.6.1.8 Key Characteristics

• A series of prominent knolls and hills.
• Dominated by an Upper Chalk surface geology giving rise to argyllic brown earths.
• Land cover is predominantly arable, with improved pasture on lower ground towards the River Valleys.
• Dominated by a pattern of medium to large Parliamentary type fields.
• Deciduous and coniferous woodland silhouette against the skyline, clothing the crests of the slopes.
• Low density, dispersed settlement pattern of scattered farmsteads.
• The absence of major roads contributes to the feeling of remoteness.
• A number of ancient woodlands including Burwood, Ashwood Copse and Boulsbury Wood (SSSI).
• Neolithic and Bronze Age burial monuments, prehistoric and Romano-British enclosures, settlements, field systems and linear boundaries and hillforts contribute to the plethora of visible historic features of the landscape.
• Panoramic views from hill tops.

Recorded Squares:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences
2882	9.9464	6.5547	3.3917
3064	4.0584	-8.7632	12.8216
2947	9.456	-0.4726	9.9286

TYPE 5: CHALK RIVER VALLEYS – 20% of AONB

6.6.1.9 Description

The river valleys are a key element of the landscape. In contrast to the often unsettled downland, villages tend to be concentrated in these valleys, sited at the springline, just above the water meadows and floodplain.
In physical terms, these valleys can be divided into two groups. First there are the river valleys - such valleys tend to flow 'across' the chalk landform, from west to east. The Wylye and Ebble fall into this category. The second group of river valleys consists of those which drain the dipslope of the chalk, tending to flow 'down' the landform, from north to south. Along the southern dipslope a series of active rivers, the Tarrant and Allen that drain into the Stour and the Crane and Allen that drain into the Avon, have eroded valleys as they drain towards the south east.

6.6.1.10 Key Characteristics

• Strongly enclosing valley sides, frequently eroded to form dry tributary valleys.

• The steepest valley slopes have retained their semi-natural chalk grassland or are clothed in 'hanging' woodland while the shallow valley sides have been exploited for arable cultivation.
• The clear fast flowing chalk rivers and streams are a key habitat.
• The floodplains support watermeadows, cress beds and damp pastures.
• The valleys typically provide convenient transport corridors, containing major roads and railways.
• Straight-sided fields represent late 18th/early 19th century Parliamentary inclosure, with large scale fields resulting from 20th century boundary loss.
• Field boundaries and footpaths often reflect the tracks, droves and hollow ways that took the livestock to and from the downs in the Medieval period.
• A series of linear springline villages typically lie at the foot of the valley slopes.
• Isolated Neolithic long barrow burial monuments, Bronze Age round barrows and watermeadow channels on the valley floor contribute to the visible archaeology.
• The rural landscapes are sometimes interrupted by the large volumes of traffic that use the valleys as transport corridors.

Recorded Squares:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences
147	8.674	8.1728	0.50
224	-5.5672	3.2696	8.84
231	-9.1546	-0.7383	8.42
326	-2.188	-13.2313	11.04
446	3.884	-17.5868	21.47
501	3.9672	-8.0806	12.05
509	8.0092	-13.2455	21.25
572	3.6108	-9.5862	13.20
575	6.64	-17.8189	24.46
623	6.6312	0.3631	6.27
636	4.2264	-0.0185	4.24
638	-5.1224	-12.0867	6.96
698	-0.4486	9.1956	9.64
699	6.297	1.4928	4.80
706	4.426	-2.7578	7.18
708	5.9468	0.0771	5.87
757	7.835	-12.4118	20.25
766	1.022	2.9225	1.90
768	2.0324	-7.705	9.74
827	6.9198	-4.7433	11.66
837	-9.69	18.4519	28.14
840	2.3728	-2.2601	4.63
978	7.7848	17.6101	9.83
1047	-0.5666	5.5685	6.14
1814	7.894	11.5621	3.67
1871	5.8424	17.5087	11.67
1907	8.9064	22.3614	13.46
2009	6.8088	18.8624	12.05
2078	-18.2078	10.4793	28.69
2152	9.9798	-44.8338	54.81

2160	5.819	-16.3607	22.18
2187	-4.375	24.0919	28.47
2191	9.5	2.5098	6.99
2218	6.679	-2.343	9.02
2311	9.956	15.9387	5.98
2380	9.428	21.6243	12.20
3227	7.8776	-28.0867	35.96
3478	-1.0462	16.6454	17.69
3601	-3.6648	14.316	17.98

TYPE 6: GREENSAND TERRACE – 9% of AONB

6.6.1.11 Description

The geology has given rise to rich brown earths and these soils support arable crop production. The large rectangular arable fields which dominate the terrace landscapes are characteristic of Parliamentary inclosure of a probable late 18th/early 19th century date. Calcareous subsoils tend to be found on the edge of the landscape type, closer to the foot of the chalk escarpment and it is here that mixed woodland typically marks the transition and edge of the terrace. Coniferous blocks, planted as game coverts, are typical features of the terrace landscape. Low density, scattered farmsteads characterise settlement and built character. There are two Greensand Terraces within the AONB, the Fovant Terrace and the Kilmington Terrace.

6.6.1.12 Key Characteristics

• Flat aprons of land from which the dramatic chalk escarpments and hills rise.
• Dominated by arable fields of Parliamentary inclosure.
• Large geometric fields and open skies contrast with the smaller scale, enclosed landscape of the adjacent Greensand Hills.
• Upper Greensand geology giving rise to rich brown earth soils that have a high agricultural value.
• Land use is predominantly agricultural, including cereal cropping, grass rotations, dairy farming and stock rearing.
• Mixed woodland runs in discontinuous belts along the base of the chalk escarpment.
• Coniferous belts shelter dispersed farmsteads.
• General absence of prehistoric earthworks.

Recorded Squares:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences
213	9.912	7.715	2.20
218	1.4286	-7.7223	9.15
251	4.0856	9.2451	5.16
303	4.172	10.6435	6.47
308	5.4176	-14.9382	20.36
358	24.8552	7.4627	17.39
587	5.3688	15.7153	10.35
598	9.428	5.817	3.61
599	7.419	16.3686	8.95

1062	-8.2358	-14.6915	6.46
1280	-0.229	-17.2763	17.05
1581	8.04	11.8776	3.84
1634	-3.8118	12.8291	16.64
1679	-9.357	10.5459	19.90
1684	6.5192	0.8747	5.64
1721	6.8176	0.9117	5.91
1766	8.9176	-3.6774	12.60
1802	-8.35	17.2783	25.63
1854	6.5584	-4.7814	11.34
1949	5.2712	-8.895	14.17
2122	-1.1832	-3.471	2.29
2240	-1.821	20.4015	22.22
2425	-4.1128	4.5604	8.67
2488	4.0664	14.8986	10.83
2538	-0.6738	18.0521	18.73
2240	-1.821	8.9419	10.76

TYPE 7: GREENSAND HILLS – 10% of AONB

6.6.1.13 Description

These hills are characterised by tight valleys, sunken lanes and are typically covered in woodland. The patterns of settlement are also distinctive. Villages are hidden among these hills, focused on the springline at the junction of the Chalk and Greensand, tucked into the valleys. The hills have historically provided desirable locations for siting large houses and parklands as well as providing strategic sites for fortified settlements and buildings where they have commanding views over the adjacent lowlands. Views vary between enclosed and framed to open and panoramic.

6.6.1.14 Key Characteristics

• Upper Greensand is exposed as a band between the older clays and younger chalk.
• The Greensand typically forms upstanding hills that have been eroded by tributaries of the major rivers into a series of rounded knolls and deep valleys.
• Hills support a large proportion of woodland, both deciduous and coniferous.
• Country houses and estates, set within landscaped parkland contribute to the scenic beauty of the area.
• Distinctive patterns of settlement include villages hidden in the shelter of the deep valleys.
• Fortifications are strategically located on the hill tops.
• Ancient sunken lanes wind their way through the hills.
• Small and irregular fields characterise areas of agricultural land use.
• Meadows and wet woodland are typical of the valley floors.

Recorded Squares:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences
25	0.4746	-11.0359	11.51

50	5.8568	-29.7918	35.65
97	-2.4746	8.7829	11.26
159	7.9874	12.7429	4.76
349	5.4504	15.7402	10.29
1398	6.8526	7.7855	0.93
1414	6.1068	7.6452	1.54
1454	-0.597	4.368	4.97
1577	4.452	11.1903	6.74
2117	4.6734	32.1352	27.46
1427	-4.5556	12.5601	17.12
1441	5.6578	16.1934	10.54
1446	-1.0082	15.9724	16.98
1490	-4.4658	-11.0413	6.58

TYPE 8: ROLLING CLAY VALES – 6.5% of AONB

6.6.1.15 Description

The result of geological process gave rise to wide open vales exhibiting a number of different geological exposures. These vales provide a contrast to the adjacent upland chalk downland and are characterised by a pastoral valley of small scale fields divided by lush hedgerows and scattered with woods and copses - both mixed and deciduous. The layout of fields, farms and villages illustrate the pattern of medieval settlement, clearance and farming, and the post-medieval process of agricultural improvement and estate development. Within the AONB there is only one Rolling Clay Vale, known as the Vale of Wardour.

6.6.1.16 Key Characteristics

• Vale occupying a geological anti-clinal between the chalk.
• Varied underlying geology with many different geological exposures.
• Pastoral landscape of small scale fields divided by lush hedgerows and scattered with woods and copses.
• Layout of fields, farms and villages illustrate the pattern of medieval settlement, clearance and farming.
• Rivers and their tributaries meander through the vale.
• A sense of enclosure is provided by the surrounding upland landscapes.
• A mixed agricultural landscape of lush improved pastures and arable production with water meadows on the valley floor.
• Wooded character with broad leaf and mixed woodland (some of ancient origin) scattered across the vale.
• Villages dispersed over the floor of the vale.

Recorded Squares:

FID	Recorded Tranquillity	Surveyed Tranquillity	Differences
1518	-3.7554	11.4075	15.16
1526	5.0822	-9.1655	14.2477
1544	-3.479	-5.1627	1.6837
1604	-5.116	1.9653	7.0813

Analysis 3 - Conclusions

It is clear from looking at the data, split into character areas, that there are some notable differences between certain character areas, but there are also some similarities.

Of particular interest is the relationship between landscape character area, and the road network. This is due to the fact that the roads within the character areas follow either ridge lines, or valley floors – particularly the A354 through area 2B and the A30 through 6A. For these areas, tranquillity is substantially reduced by the factors 'Seeing Roads', 'Hearing Occasional Noise from Cars and Lorries', 'Hearing Constant Noise from Cars and Lorries' and 'Hearing non-natural sounds'. These factors have a significant impact on the tranquillity of these character areas.

In character areas where the presence of major road networks is not so prevalent, there is substantially higher tranquillity, bought about by lower figures for those factors previously mentioned, coupled with substantially higher scores for 'Hearing – Low Noise Area'. In addition, many of these surveyed squares exhibit a generally higher score for 'Seeing a Natural Landscape', 'Seeing Remote Landscapes', and 'Seeing Wide open Spaces'.

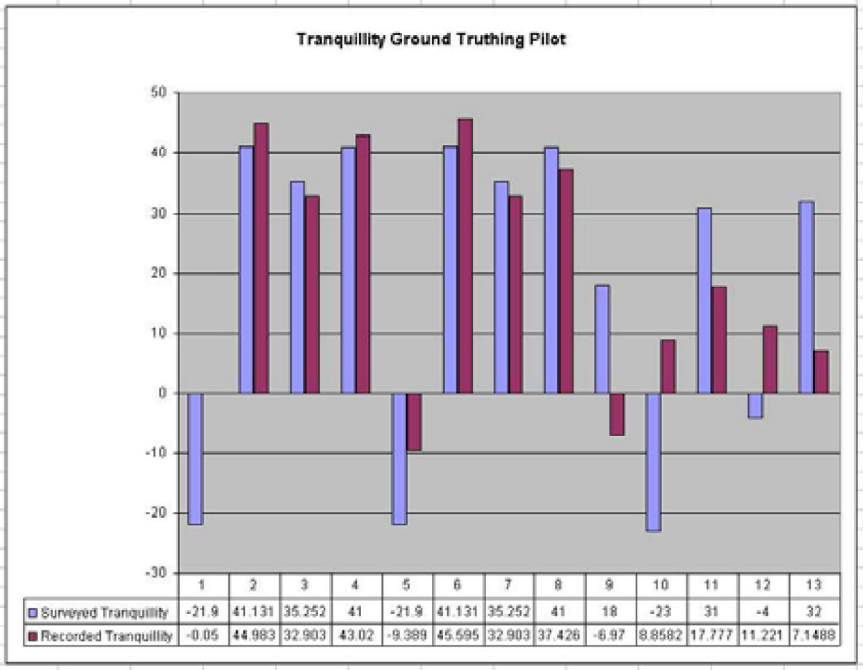
Character area 2B is a classic example of an area with varying degrees of tranquillity, and this can almost soley be attributed to the presence of the A354 which passes through the northern part of the character area. The southern squares surveyed in this particular area display notably higher tranquillity for both surveyed and the recorded scores.

7 Appendices

7.1 Appendix 1 - Results of the Pilot Exercise

Trnquillity check sheet MODIFIED_1.xls

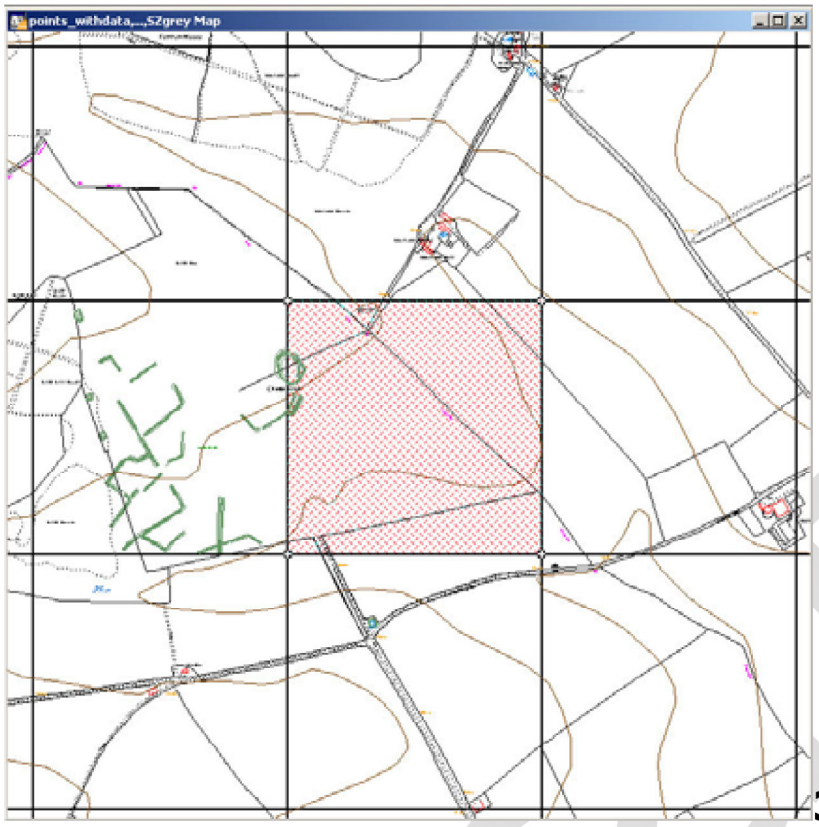
FID	Surveyed Tranquillity	Recorded	Difference
3260	-21.8952	-0.0497	
2853	41.1308	44.983	
2265	35.2518	32.9025	
2382	41	43.0197	
3260	-21.8952	-9.3885	
2853	41.1308	45.5952	
2265	35.2518	32.9025	
2382	41	37.4264	
2660	18	-6.9701	
1467	-23	8.8582	
1328	31	17.7769	
1390	-4	11.2212	
1452	32	7.1488	



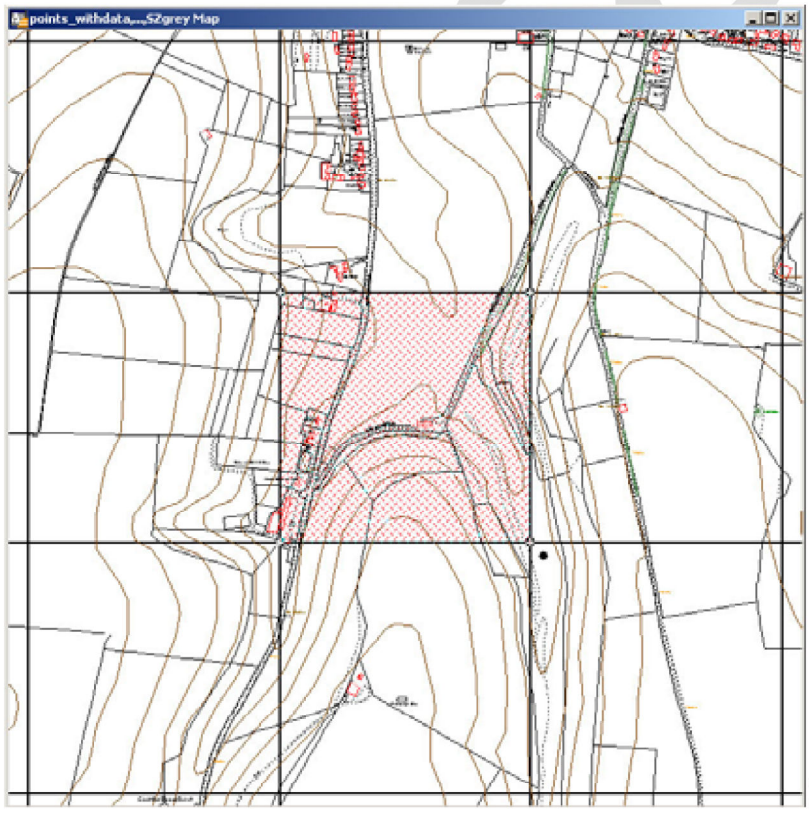
	1	2	3	4	5	6	7	8	9	10	11	12	13
Surveyed Tranquillity	-21.9	41.131	35.252	41	-21.9	41.131	35.252	41	18	-23	31	-4	32
Recorded Tranquillity	-0.05	44.983	32.903	43.02	-9.389	45.595	32.903	37.426	-6.97	8.8582	17.777	11.221	7.1488

3260 / 3260 (2) / 2853 / 2265 / 2382 / 2853 (2) / 2265 (2) / 2382 (2) / 2660 / 1467 / 1328 / 1390 / 1452 / Results /

Appendix – Square 3358 and 2152

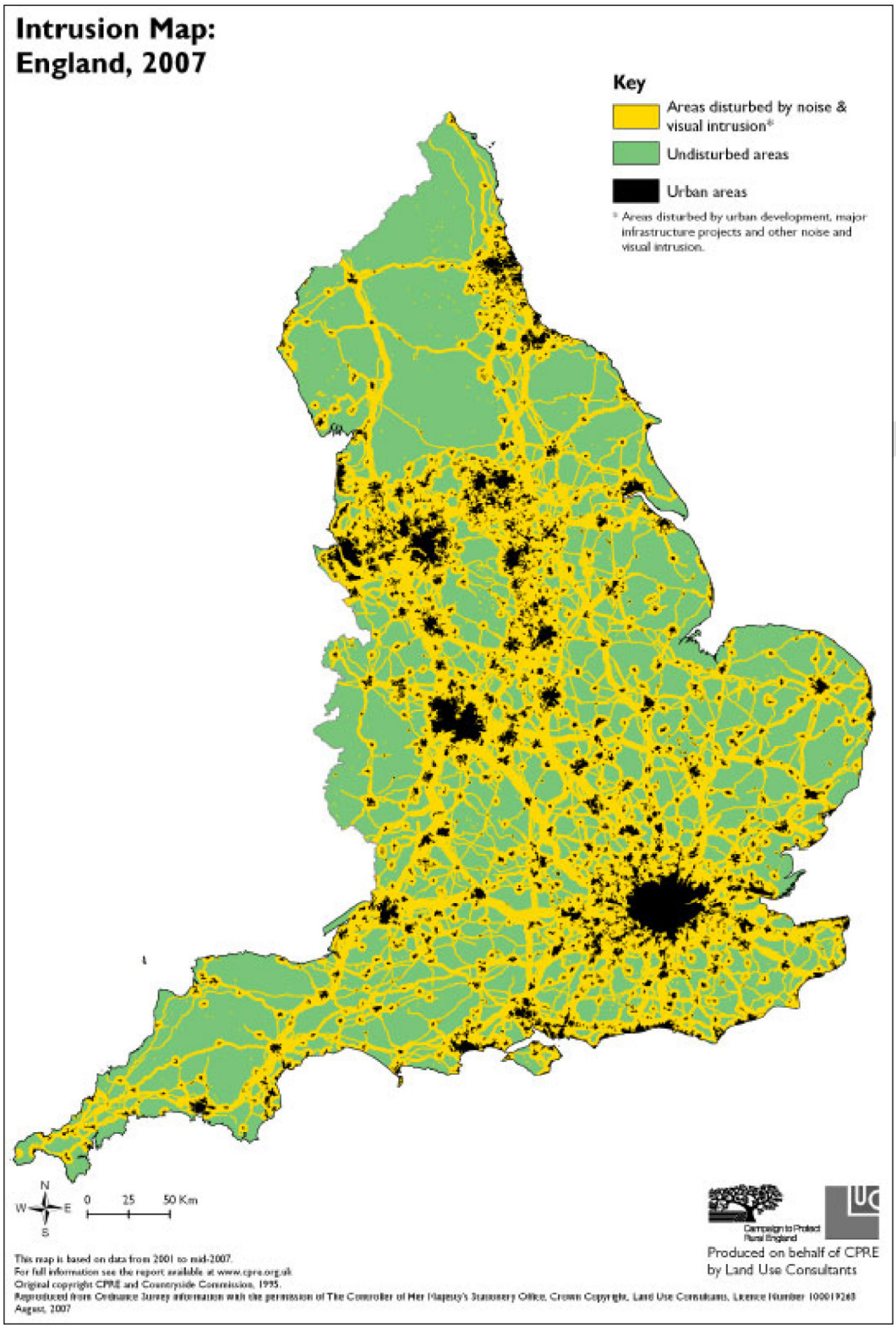


3358



2152

7.2 Appendix 2 – CPRE Intrusion map



Tranquil areas were defined as those that lay:

- 4km from the largest power stations

- 3km from the most highly trafficked roads such as the M1/M6; from large towns (e.g. towns the size of Leicester and larger); and from major industrial areas
- 2km from most other motorways and major trunk roads such as the M4 and A1 and from the edge of smaller towns
- 1km from medium disturbance roads i.e. roads that are difficult to cross at peak times (taken to be roughly equivalent to greater than 10,000 vehicles per day) and some main line railways
- beyond military and civil airfield/airport noise lozenges as defined by published noise data (where available) and beyond very extensive open cast mining.

(regional tranquil areas were drawn with a minimum radius of 1km to eliminate local effects)

Within the Tranquil Areas a further set of factors were identified as creating lower levels of disturbance affecting areas 1km wide. These were:

- low disturbance roads
- 400KV and 275KV power lines
- some well-trafficked railways.

Additionally, this lower disturbance category included:

- large mining or processing operations
- groups of pylons or masts
- settlements greater than 2,500 in population
- some half-abandoned airfields
- most windpower developments

Important Issues

For a number of criteria there is insufficient information to identify exactly how some thresholds were defined. For example,

- what defines the 'largest power stations'?
- what differentiates 'some main line railways' from 'some well-trafficked railways'?
- how were 'large mining or processing operations' defined?

Source: CPRE – Developing an Intrusion map of England : August 2007 – Prepared for CPRE by Land Use Consultants

7.3 Appendix 3 – Surveyors spreadsheet

TRANQUILLITY SQUARE REF:	2356																
POSITIVE FACTORS					Admin Only:			NEGATIVE FACTORS					Admin Only:		
	No	Min	Med	Strong	Score	Weight	Final		No	Min	Med	Strong	Score	Weight	Final
Seeing a Wild Landscape	1				FALSE	2.12	0	*Seeing* Urban Development				1	3.5	4.62	16.17
Seeing Remote Landscapes			1		2.5	1.4	3.5	*Seeing* Towns and Cities		1			1.5	2.5	3.75
Seeing Wide Open Spaces		1			1.5	2.15	3.225	*Seeing* Villages and Scattered Houses			1		2.5	1.25	3.125
Seeing a Natural Landscape			1		2.5	6.59	16.475	*Seeing* Roads			1		2.5	1.72	4.3
Seeing Trees in the Landscape		1			1.5	1.81	2.715	*Seeing* Railways		1			1.5	0.37	0.555
Seeing Deciduous Trees				1	3.5	0.89	3.115	*Seeing* Power Lines		1			1.5	2.73	4.095
Seeing Natural Looking Woodland	1				FALSE	3.17	0	*Seeing* Any Signs of Human Impact		1			1.5	1.26	1.89
Seeing Water	1				FALSE	6.42	0	*Seeing* Anyone at All		1			1.5	0.22	0.33
Seeing the Stars at Night		1			1.5	3.03	4.545	*Seeing* Wind Turbines			1		2.5	1.09	2.725
Hearing Water	1				FALSE	3.58	0	*Seeing* Low Flying Aircraft	1				FALSE	2.82	0
Hearing Low Noise Area		1			1.5	15.06	22.59	*Seeing* Overhead Pollution	1				FALSE	3.34	0
							56.165	*Seeing* Coniferous Trees				1	3.5	0.21	0.735
							28.883	*Hearing* Occasional Noises from Cars and Lorries					FALSE	0.54	0
								Hearing Constant Noise from Cars and Lorries			1		2.5	10.96	27.4
								Hearing Railways and Trains	1				FALSE	0.3	0
								Hearing Low Flying Aircraft	1				FALSE	2.78	0
								Hearing Non-natural Sounds			1		2.5	1.32	3.3
								Seeing and hearing Lots of People			1		2.5	11.05	27.625
								Seeing and hearing High Altitude Aircraft	1				FALSE	0.45	0
Total Ground Truth	-17.998														96
Total CPRE	-21.895														**46.88**

7.4 Appendix 4 – Surveyors guidance notes

Positive Tranquillity Factors

SEEING	
Wild Landscapes	A natural unmanaged landscape. Absence of development, no human activity or people and no hedgerows or roads etc.
Remote Landscapes	Very few roads or tracks are visible, very little sign of development; possibly the odd farmhouse. Little human activity is visible.
Wide Open Spaces	Open Vistas, long and wide views of surrounding landscape. Sweeping fields. The higher the visibility the more 'open' an area is perceived to be. Ignore man made structures.
Natural Landscapes	Natural looking vegetation cover, beautiful scenery. May contain fields, glades and moorland but appearance is discreetly and sensitively managed. Sensitive and not intensive farming practices, natural crops and livestock ie, corn, wheat, sheep, cows.

Trees in the Landscape	Any types of trees within the landscape.
Deciduous Trees	Trees such as Oak, Beech, Birch, Elm, Ash.
Natural Looking Woodland	Mainly deciduous trees, leaf litter and dead wood evident. Little sign of woodland management.

Water Features	Any streams, rivers or lakes in the landscape.
Stars at Night	Assuming clear skies, will it be possible to see stars at night? Please estimate.

HEARING	
Water Features	Hearing lapping water, running water, waterfalls, rivers and streams.
Low Noise Areas	Hearing **natural** sounds - i.e. Hearing birdsong, wildlife, no artificial or human sounds. Distant agricultural noises. Includes hearing silence.

Negative Factors of Tranquillity

SEEING	
Urban Development	Any building structures within the landscape. Including isolated houses, farm buildings, hamlets, power cables, pylons, roads etc.
Towns and Cities	Settlements with over 10,000 inhabitants. Signs of extensive development and human activity, large expanses of buildings. Lots of evidence of pylons and power cables etc.
Villages and Scattered Houses	Settlements with less than 10,000 inhabitants. Evidence of some development and human activity. Open spaces. May be some evidence of power cables and pylons.

Roads	Roads of any size or class, including farm roads, B Roads, Minor roads.
Railways	Railways are visible within the landscape.
Power Lines	Any sign of pylons, power cables or power plants.

Any Signs of Human Impact	Any building structures within the landscape – including anything related to human activity, foot paths, signs, litter, intensive and unnatural farming practices i.e. Maize, Oilseed rape.
Anyone at All	Any visible sign of people in the landscape, or any sign anyone has been in the landscape recently.

Wind Turbines	Wind turbines are visible in the landscape.
Low Flying Aircraft	Low altitude aircraft are visible.
Overhead Pollution	Consider your proximity to developed areas – would there be any possibility of night-time 'skyglow' or might there be light pollution as from street lighting.
Coniferous Trees	Trees such as Pine, Spruce, Cedar, Larch etc.

HEARING	
Occasional Noises from Cars and Lorries	**Frequent breaks** in traffic sounds, infrequent and not regular traffic flow noises, can be high volume.
Constant Noise from Cars and Lorries	**Little or no breaks** in traffic sounds, frequent and regular traffic flow noises, repetitive and on-going sounds of motor vehicles.
Railways and Trains	Hearing the rumble and motion of any train or railway activities at all.
Low Flying Aircraft	Low flying aircraft can be heard at all.
Non-natural Sounds	Sounds that drown out natural sounds such as bird song. Sounds associated with human activity and development.

SEEING and HEARING	
Lots of People	See and hear more than 1 or 2, or crowds of people. This can include those in cars, on bikes, walkers etc.
High Altitude Aircraft	See and hear high altitude aircraft at all.

Tranquillity – What is Tranquillity?

Tranquility is considered to be a state of calm, quietude and is associated with peace; a state of mind that promotes mental well-being.

In order to keep the research as simple as we can, we have produced a standard tranquillity questionnaire to fill out at each survey location.

Positive and Negative Aspects of Tranquillity

The questionnaire is divided into two distinct parts;

- **Positive Tranquillity Factors** - aspects that add to the tranquillity of the area;
- **Negative Tranquillity Factors** – aspects that detract from tranquillity.

Hearing and Seeing Tranquillity

The questionnaire is further divided by **seeing** and **hearing** tranquillity factors.

It is essential that you spend time at each location thinking about the landscape and the feeling of tranquillity, and then carefully assess the tranquillity in terms of its visual and aural aspects.

Carrying out the research

You will be asked to assess the tranquillity in several different areas. You will have maps of each area – the size of the square being 500 metres by 500 metres.

Whilst it is important that for the research you try to get as close to the centre of each square as safely and best you can, you will have to try to assess the tranquillity for the square as a whole, not just your immediate locality.

For example, if you stop on a road with hedges each side, you might not be able to see any evidence of a 'Natural Landscape'. However, if one was to peer through the hedge, there may be wide ranging natural views. Try to take this into account in your assessment.

We plan to have more than one person visit each square and at different times, so as to reduce any personal bias and effects linked to a particular time of day.

Main points to consider

- Please try and assess the tranquillity of the square from a safe and public place.
- Try to position yourself as to give a good chance for landscape to be viewed - i.e. not behind a hedge.
- Record the start time on the questionnaire.
- Spend 15 minutes at each square in order to get a good feel for the square, recording your perceptions onto the questionnaire.
- Use the '**guide to tranquillity terminology'** sheet to help you fully understand what each factor means.
- Please add any additional feeling and/or observations on the sheet in any space available. **These comments will be extremely useful to us as we collate the data.**
- Record the time you leave the centre point of the square and keep the questionnaire safe!!

To ensure your safety while taking part in this research, it is essential that you let someone know when and where you are going and when you are expected to be back. It is also highly advisable that you carry a charged and working mobile phone.

If you need any assistance at anytime before, during or after the research do not hesitate to contact either Richard Burden or Harry Bell on 01725 517417.

It is important to remember throughout the research process, there is no right or wrong answer. The data collected is based on your own perceptions and opinion of tranquillity. Your view of tranquillity can be very different to other people's views.