



Campaign to Protect  
Rural England

## How to measure tranquillity

CPRE's new way of mapping tranquillity is based on detailed and extensive survey work to establish what tranquillity means to people enjoying the countryside, what factors add to or detract from experiencing tranquillity and how important each one is to that experience. The most important factors have been mapped using national datasets to represent the factor digitally on a map of England divided into 500m by 500m grid squares. All the factors for each square are then combined to give an overall value. The map shows this value on a spectrum from green – most tranquil – to red – least tranquil – on a national scale. So, the map combines information from a wide-scale survey about people's experience of tranquillity in the countryside – 'qualitative' information - and detailed hard data – 'quantitative information' - in a sophisticated Geographic Information System (GIS) model.

### Earlier efforts

The new method of mapping tranquillity builds on the CPRE/ former Countryside Commission work in the 1990s on mapping tranquil areas carried out by Ash Consulting. Although these maps were groundbreaking for their time, they only mapped three types of area – tranquil, semi-tranquil and non-tranquil – and used an 'expert' definition of tranquil areas. This definition only referred to negative features which destroyed tranquillity.

The new mapping method was piloted a couple of years ago in two areas in the North East, led by CPRE's regional group, Northumberland National Park and the West Durham Coalfield and published as *Mapping Tranquillity* in 2005. This study was essential to the national project in two main ways. Firstly, for carrying out participatory appraisal to identify what tranquillity meant to the public and stakeholders. Participatory appraisal as practised by the researchers is a way of consulting people which uses a range of 'non-directive' techniques to explore people's 'perceptions, values and beliefs' without imposing the researchers' opinions on them. Secondly, the North East research developed advanced modelling techniques using GIS to map tranquillity based on hard data and evidence from the participatory appraisal.

### The 2006 national maps and method in detail

Firstly, the researchers used the range of factors affecting tranquillity identified in the North East participatory appraisal to carry out an extensive consultation at 20 further sites nationally. Over 1,300 countryside visitors were surveyed in five districts across the country. The districts were selected for their distribution across England, their different landscape characters and for the range of issues which might affect tranquillity relevant to those areas (for example 'air traffic, urban expansion, recreational pressures, busy roads' 2006:50<sup>i</sup>).

The survey questionnaire asked two multiple questions: Q1. What is tranquillity? What enhances it? What adds to it? Q2. What is not tranquillity? What detracts from it? What lessens it? Participants were given a range of options chosen by the researchers from the most significant factors identified in the participatory appraisal research work and taking into account their potential to be mapped. The responses to these options were then collated and ranked in order of importance to create a national list of the 44 factors that add to and detract from tranquillity.

**The Top 10:** Research shows that tranquillity is: Seeing a natural landscape, hearing birdsong, hearing peace and quiet, seeing natural looking woodland, seeing the stars at night, seeing streams, seeing the sea, hearing natural sounds, hearing wildlife, hearing running water (Top 10 answers).  
Tranquillity is not: Hearing constant noise from cars, lorries or motorbikes, seeing urban development, seeing overhead light pollution, seeing and hearing lots of people, seeing and hearing low-flying aircraft, seeing power lines, seeing towns and cities, seeing roads (Top 10 answers).

Researchers then assigned different weightings to the factors based on their relative importance revealed through the surveys and associated the factors with geographical datasets. They divided the country into 500m by 500m grid squares and, by using GIS modelling, assigned a tranquillity score to each square, based on the weighted factors, relative to scores in other squares, on a scale from most to least tranquil across England. These scores are represented by colours on a spectrum with the most tranquil areas in dark green and least tranquil areas red. The tranquillity of any square relative to another nationally is indicated by the colour on this scale.

#### **What the new method does**

- Combines what people value for the experience of tranquillity in the countryside and likelihood of hearing and seeing features which contribute to tranquillity
- Uses national datasets to take into account positive features such as natural landscape, woodland, rivers and streams, the sea, openness of landscape, visibility of the night sky
- Uses national datasets to take into account negative features such as road traffic, aircraft, light pollution, concentrations of people, urban areas, pylons and wind turbines
- Produces 'continuous surface maps' of tranquillity at a fine grain – 500m by 500m squares – across England which allow comparison of areas nationally
- Accounts for the influence of features in neighbouring squares including across the borders with Wales and Scotland
- Allows a range of potential uses such as for campaigning for tranquillity protection, promoting regions for tourism and economically for their quality of life, as an environmental assessment tool, as a spatial planning tool
- Allows 'individual component maps' to be produced by breaking down the overall map – these could be used to:
  - Inform planning decisions on visibility of new structures
  - Assess the 'perceived naturalness' of landscape changes
  - Identify areas exposed to low levels of noise (averaged over time)
  - Protect, enhance and increase tranquil areas in local, regional and national spatial planning policies
  - Identify the percentage of an administrative area affected by a particular factor
- Allow data to be re-classed to create regional scale maps showing areas of higher and lower tranquillity across the region
- Allow the effects of urban expansion, traffic growth or new roads on tranquillity to be modelled and mapped
- Could be used as an indicator to measure change if national maps are rerun over time or more locally specialised maps are created and rerun

#### **What the new method does not currently do**

- Identify areas on the basis of an absolute amount of tranquillity or lack of it
- Show on a national scale valuable pockets of tranquillity within urban areas
- Model all factors to the same precision or depth; national data is not available to the same extent for all factors and some factors are more difficult to model than others

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<sup>i</sup> Jackson, S, Fuller, D, Dunsford, H, Mowbray, R, Hext, S, MacFarlane R. and Haggett, C, *Tranquillity Mapping: developing a robust methodology for planning support*, 2006