

The new definition of urban and rural areas of England and Wales

A review recommended a completely new approach to rural definitions based upon rural and urban 'settlement structure'.

The new definition of rural applies to settlements with less than 10,000 population.

Introduction

During the late 1990s it became clear that the lack of a consistent and comprehensive government definition of rural areas hindered aspects of rural policy making¹. The publication of the urban and rural White Papers in 2000 led to a review of the existing definitions². A joint government initiative was set up to identify the various definitions of 'urban' and 'rural' in use, to assess their strengths and weaknesses in relation to policy needs and to make recommendations for any necessary definitional changes.

The review found that the Government's adopted definition of 'urban areas' worked in all important respects, although there was a need for better documentation to help users of the definition. For rural areas, however, the review found significant weaknesses including the lack of a clear conceptual basis for definition and an outdated dependence on social and economic criteria at a time when rural areas were becoming much more diversified. In addition, the lack of geographical detail in distinguishing rural areas was an obstacle to the targeting of rural policies³.

The review recommended a completely new approach to rural definitions based upon rural and urban 'settlement structure'. A Project Board consisting of representatives from relevant government bodies was subsequently established to appoint consultants and manage the work⁴. The new definition, which made use of advanced geographic information analysis techniques, was validated in the Spring of 2004 and launched on the Office for National Statistics website in July 2004⁵. This research note describes the development of the new government definition of rural areas of England and Wales and indicates its potential role in rural policy.

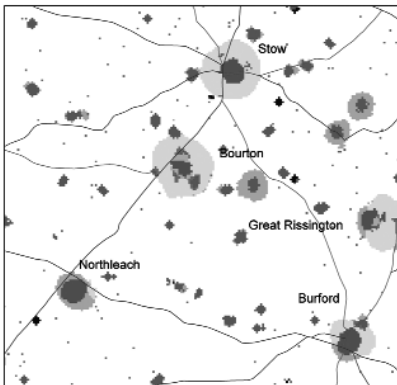
The Approach

The remit set for the new definition was that it should apply to those places, which had a population of less than 10,000 in 2001. The new definition of rural applies to settlements between 10,000 and about 1,500 population (the lowest settlement size recognised by Government as comprising an urban place), together with, importantly, places further down the settlement hierarchy such as rural towns, small villages, hamlets and isolated dwellings.

The Countryside Agency research notes

The new definition relies upon two aspects of settlements, namely, their morphology (physical form) and their wider geographic context (location).

Figure 1



Compiling a rural definition via the morphological and contextual aspects of settlements has a number of advantages:

- it relates directly to and extends, the 'land use' rationale of existing urban area definitions, though in this case the focus is on residential land use;
- both the morphological and the contextual dimensions of the definition can be derived in essentially the same way, the only difference being the geographical scale at which the methodology is applied;
- in defining places in terms of residential land use it focuses on the more enduring aspects of settlements compared, say, with the more rapidly changing demographic or economic characteristics of settlements; and
- it reflects a major concern of rural policy, ie. how to deliver services such as health, education and transport to people living in different types of rural settlement.

There were two stages to the process of definition itself. The first consisted of identifying at a very fine-grained scale of analysis, the different components comprising the rural settlement structure and the wider geographical context of these settlements. The second consisted of relating settlements to Census Output Areas and wards and classifying such areas by the proportion of people in each settlement type.

Representing the Rural Settlement Pattern

(a) Settlements

The identification of settlements below 10,000 population has as its 'raw material' the postal addresses of residential premises, which can be located via a 10m resolution Ordnance Survey grid reference for the unit postcode of each address. This is provided by Royal Mail's 'Postcode Address File' (PAF) as found in the Address Manager database. The starting point for representing the rural settlement pattern - what we have called the 'underlying settlement classification' - is the allocation of every postal address to the appropriate one hectare (100m x 100m) cell in a grid covering England and Wales.

The methodology for identifying settlements makes use of the fact that the density of residential addresses is a function of the scale at which density is measured. As areas are extended around a cell containing addresses, more areas of open space may be included and average densities will decline. Calculating address densities for a fixed set of areas around a cell gives rise to what is called a 'density profile' and different settlement forms can be shown to have different typical 'density profiles'. Densities are calculated at 200m, 400m, 800m and 1600m around a cell.

An example of a settlement identified in this way is Great Rissington in Gloucestershire, a village of about 360 dwellings (Figure 1). At the 800m scale the typical density for a hectare cell in the village is 0.73 dwellings to the hectare; at the 400m scale the corresponding density is 2.94 and at the 200m scale it is 11.08. 'Density profiles' can identify such features as the 'urban fringe' (where there are abrupt changes of density between scales), nucleated villages and their 'envelopes' of looser development and areas of scattered dwellings. Areas of higher density dispersed settlement around cities and towns also have a distinct 'peri-urban' density profile.

(b) Settlement Context

The 'context' of a settlement is identified in a similar fashion, except that the geographic scales of the 'density profiles' are much larger. For each 1ha cell a calculation is made of the average density of households at 10km, 20km and 30km from the cell. These distances were chosen for their rough similarity to typical travelling distances for the delivery of different types of services to be delivered to people in rural areas. The context measure can be seen as an

¹ See, for example, *Rural England*, House of Commons Environment Committee, HMSO 1996

² MAFF, DETR, *Our Countryside: the Future, A Fair Deal for Rural England*, Cm 4909, November 2000, DETR *Our Towns and Cities, the Future*, November 2000.

³ SERRL/Bbk *A Review of Urban and Rural Area Definitions*, report to ODP, December 2002

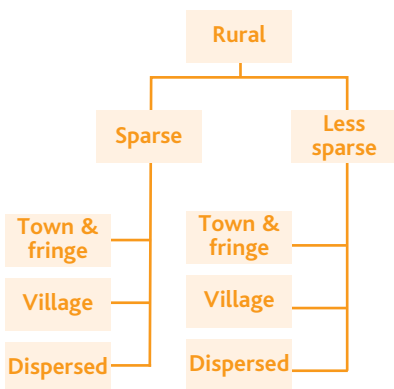
⁴ The Project Board consisted of personnel from the Countryside Agency, Defra, ODP, the Welsh Assembly Government and the Office for National Statistics. The consultants were a consortium from SERRL/Birkbeck, the University of Sheffield and Geowise™ of Edinburgh.

⁵ See www.statistics.gov.uk/geography/nrudp.asp

⁶ A third important characteristic which can be used to define places, namely their functional characteristics (eg their role as commuter settlements, manufacturing or tourist centres or market towns etc.), was also extensively researched but it was decided, for the sake of simplicity, not to include a functional dimension to the definition at this stage.

Three types of areas were classified: 2001 Census Output Areas, Super Output Areas and wards.

Diagram 1: The Structure of the Classification of Output Areas



indicator of the average 'sparsity' of population across a broad area. In order to be classified as 'sparse' a grid cell or place had to have low average densities at all three of the geographic scales noted above. It is thus a fairly exacting (and hence discriminating) measure of the 'sparsity' of population.

Classifying Statistical and Administrative Units

Having identified the settlement type and context of each 1 ha cell in the grid, the next step is to classify the settlement characteristics of the statistical and administrative areas in which each cell is located. This permits the use of a range of statistical data for rural areas, for example, those from the decennial population census. Three types of data collection/administrative areas were classified directly in association with the development of the new rural definition: 2001 Census Output Areas, Super Output Areas and wards⁷.

Classification of areas is done by identifying the proportion of population in each settlement type within the area concerned. At Census Output Area level, units are grouped into four morphological types on the basis of their predominant settlement component, namely urban, town and fringe, village, and dispersed. Output Areas were treated as 'urban' or 'rural' simply on the basis of their geographic relationship to settlements of 10,000 or more population. Where the majority of the population of an Output Area lives within settlements with a population of more than 10,000 people, that Output Area is treated as urban. All other Output Areas are treated as rural. Output Areas are also given a 'sparsity' score at 10km, 20km and 30km. Output Areas are classified as 'sparse' if they fall within the sparsest 5 percent of Output Areas at all three scales and are classified as 'less sparse' if they do not fall within this threshold (Figure 2).

Finally, the classifications on the 'settlement' and 'context' dimensions are combined to produce a 'two-fold' rural characterisation of areas as indicated in Diagram 1. The map of Output Areas classified according to settlement type and sparsity is shown in Figure 3.

Similar procedures are applied to the classification of wards into rural types. However, because the design of electoral wards is such that very few are

Figure 2



Figure 3



⁷ See www.statistics.gov.uk/geography/census_geog.asp

characterised by predominantly dispersed settlement (in fact, only 0.5 percent), only three morphological categories are distinguished: urban, town and fringe, and village and dispersed.

Classifying Larger Areas

Generally speaking the same classificatory principles can be applied to larger areas such as local authority districts and unitary authorities. However, because the design of territories for local authorities tends to include a mix of urban and rural areas (typically with a population of 100,000 or more), the process of classification is much less straightforward⁸. For this reason the rural definition Project Board declined to recommend a classification at this level noting, in particular, that a simple binary (urban/rural) definition at this scale was of limited value.

Nevertheless, it was recognised by members of the Project Board (and frequently noted by contributors to the validation process for the new definition), that a local authority based definition of 'rurality' is necessary for certain data analysis and presentation purposes. Defra has therefore asked the Rural Evidence Research Centre at Birkbeck College to explore ways in which the components of the new definition might be used to produce a more sophisticated definition of rurality at local authority level. This in turn, might be applied to other areas such as Primary Health Care Trusts.

Conclusion

The new definition of rural areas of England and Wales represents a major step forward in the identification of 'rurality' for data analysis and policy purposes. Indeed, based as it is upon such highly detailed underlying data to identify rural settlement form, it is probably a unique definition of its kind. The salient features of the definition so far as the development of evidence and policy on rural areas are concerned, are as follows:

- it focuses on a single key dimension of rurality, namely, the settlement pattern, and hence when other data are used in conjunction with it, it is clearer what the associated pattern of information reveals eg the proportion of older people in villages and hamlets in sparsely populated areas;
- by focusing on the more permanent (ie. settlement) features of rurality, it completes the hierarchy of settlement inherent in the urban areas definition and avoids using irrelevant or rapidly changing demographic and economic data to identify rural areas;
- the underlying classification of rural settlements can be easily linked, via the OS grid references for postcodes to other data such as lifestyle information or the locations of rural services such as post offices, schools, doctor's surgeries etc.; and
- being based upon postcoded information which is updated quarterly, the definition is itself updatable on a basis that is more frequent than, for example, the decennial census of population.

Further reading

Bibby P and J Shepherd, *GIS, Land Use and Representation Environment and Planning B*, 27, 2000, 583-598

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General Register Office for Scotland, *Scottish Settlements, Urban and Rural Areas in Scotland*, 2001

Raper, J, D Rhind and J Shepherd, *Postcodes the New Geography*, Longman, 1992.

Roberts, B K *Rural Settlement in Britain*, Routledge, London 1977

Roberts, B K *Landscapes of Settlement*, Routledge, London 1996

⁸ On the basis discussed above, three quarters of local authority districts appear as 'urban' in morphological terms, whilst the remainder have no predominant settlement form.