

Urban green nation: Building the evidence base

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Foreword

England is not a big country and eight out of 10 of us live in urban areas. In our densely populated surroundings, it is the networks of parks and green spaces that sustain the quality of our everyday life.

Ten years ago, the parlous state of England's parks and green spaces was causing serious concern. The government set up an Urban Green Spaces Taskforce and then in 2003 charged CABI with championing efforts to reverse this long-term neglect. Seven years on, we have brought together all the available evidence on the state of England's urban green space. It is the first time this has been done.

The good news is that the historic decline in the quality of urban green space has been arrested, and is being reversed. It is clear that the higher the quality of green space, the more likely it is to be used. So people are now using their parks and green spaces more and, importantly, they value them more. This interest, in turn, can be used to mobilise community involvement in decisions about the delivery of local services.

But the data also shows that not everyone has benefited equally from these improvements. The provision of green space is worse in deprived areas than in affluent areas.

Urban Green Nation shows how better information, more widely available, can create better public services. This is not fanciful: it is essential for the success of local government. And the evidence shows that if people are satisfied with the quality of their parks, they tend to be more satisfied with their council, too.

We all know budgets are going to be tight in the years ahead. But I believe we must keep focusing political attention and financial investment on this sector. Fortunately, having a much more sophisticated understanding of the state of urban green spaces means being able to target resources more effectively. Now, if we choose, we can match provision to need.

Paul Finch OBE
Chair, CABI

1 Introduction

This report presents the findings of the first of two pieces of research commissioned by CABI Space to gauge the state of England's urban green space and its impact on people's health and well-being.¹ It starts to fill the serious information gap highlighted by the Urban Green Spaces Taskforce and its recommendation that this problem should be resolved.²

Parks and green spaces are the backbone of sustainable and high-quality urban environments. A growing body of robust research demonstrates that high-quality green spaces bring considerable benefits to local economies, to people's physical and mental health, and to the environment.

Despite a renewed interest in green space, there is very little accurate information about how many parks and green spaces there are in urban England, where they are, who owns them, what condition they are in, or how many people are employed in looking after them. Without this basic data, it is hard to ensure that scarce public resources are allocated and targeted to best possible effect.

To date, much more information has been gathered on the nation's rural spaces.³ This is the first review of the urban evidence. This study draws together all the data from the research that has been done.

The study investigated over 70 major data sources, and assembled an inventory of more than 16,000 individual green spaces. We have analysed this quantitative data to discover what it says about England's publicly owned and managed urban green space.

We found that (and some of this is not surprising):

- Almost nine out of 10 people use parks and green spaces, and they value them
- If people are satisfied with local parks, they tend to be satisfied with their council
- The provision of parks in deprived areas is worse than in affluent areas
- People from minority ethnic groups tend to have less local green space and it is of a poorer quality
- The higher the quality of the green space, the more likely it is to be used.

Chapter 8 sets out the findings from our analysis of the data.

¹ Research by Heriot-Watt University.

² *Green spaces, better places: final report of the urban green spaces task force*, DTLR, 2002 and *Enhancing urban green space*, National Audit Office, 2006.

³ *The green information gap: mapping the nation's green spaces*, CABI Space, 2009.

Using existing data sources to establish baseline information

Despite the lack of comprehensive, nationwide information about the quantity, quality and use of England's urban green spaces, there have been many studies that have researched various aspects of green spaces. So there is a large body of overlapping data collected by different organisations that for different reasons, prior to this study, had never been drawn together and analysed.

Therefore, this research project aimed to use the quantitative data already available to discover what it can tell us about England's publicly owned and managed urban green space, and to establish baseline data from which future changes can be tracked. It relates to other sources of information about the environment in England.⁴

Specifically the research set out to:

- make best use of existing sources of relevant data about green spaces in England's urban local authorities⁵
- devise a suite of indicators that could be used to track changes to England's urban green spaces and form a baseline for measuring trends in the future
- interpret and analyse all data around core themes
- identify significant gaps in the existing data.

This report is the first of two pieces of research from CAGE Space that should help to start to fill the information gap. The second part of this research examines in more depth the impact of the quality of green spaces on the well-being of people living in six deprived urban areas.

The second part focuses on black and minority ethnic communities within these areas and the relationship between perceptions of quality of urban green space and its use – an area of research that has to date received little attention.⁶ It also shows how investing in parks and green spaces can have a powerful effect in tackling social disadvantage.

In addition, the CAGE Space briefing *The green information gap: mapping the nation's green spaces* sets out the information that is missing about England's urban green spaces and calls for a number of specific actions to address this.⁷ *The green information gap* draws upon the research which is set out in more detail in this report.

Making best use of existing information

This study explored over 70 major and diverse data sources to find out what it can tell us about the state of England's publicly owned urban green spaces. The study did not consider privately owned green spaces such as communal or private gardens or the grounds of institutions such as universities and art galleries. Instead, it concentrated only on publicly owned, managed and maintained spaces that are, in theory, open and accessible to all.

MAGIC is the main government data portal that brings together individual datasets about different types of green space.⁸ This was the first web-based interactive map of information on key rural environmental schemes and designations and was designed to support policymaking.

There is no urban equivalent to MAGIC and the lack of co-ordination in regard to data collection is one factor limiting present understanding of the urban environment.⁹ Instead, a number of national organisations, such as Natural England, the National Trust and Sports England, hold information about particular types of open space (table 1).

The *Public parks assessment* (PPA), carried out in 2001, is the only attempt to survey urban green spaces in England.¹⁰ The PPA provides an overall estimate of the number of parks and recreational spaces – giving a figure of around 14,600 parks for urban England as a whole, covering a total of 69,500 hectares.¹¹

The detailed list of data sources reviewed for the purposes of the study is in appendix 1 of this report.

4 Such as the *State of the environment* reports published by the Environment Agency and Natural England. <http://cabeurl.com/ba> and <http://cabeurl.com/ab>

5 This research project used the National Audit Office's list of 154 urban authorities from *Enhancing urban green space*, 2006.

6 Research by OPENspace Research Centre, Edinburgh College of Art, in collaboration with Heriot-Watt University.

7 *The green information gap: mapping the nation's green spaces*, CAGE Space, 2009.

8 See www.magic.gov.uk

9 Community and Local Government's (CLG) green spaces datahub is no longer operational but this did provide one co-ordinated resource for data about urban green space.

10 *Public parks assessment: a survey of local authority owned parks focusing on parks of historic interest* Urban Parks Forum, 2001. This was used in preference to the update carried out in 2004/05 for the National Audit Office as the data is more complete and establishes a better baseline.

11 Unfortunately the assessment only recorded detailed information – such as the name of the park and its size – for the 1,300 urban parks that were considered to have historic value.

Table 1: Examples of sources of data about green and open space in England

Data	Data owner	Available from
<i>Public parks assessment</i>	Audit Commission	Audit Commission/GreenSpace
Fields in Trust playing fields	Fields in Trust	Fields in Trust
GreenSTAT	GreenSpace	GreenSpace
Allotment sites 2004-05	Communities and local government (CLG)	CLG
Community gardens and city farms 2004-05	CLG	CLG
Areas of outstanding natural beauty	Natural England	MAGIC
Country parks	Natural England	MAGIC
Registered common land	Natural England	MAGIC
National nature reserves	Natural England	MAGIC
Local nature reserves	Natural England	MAGIC
Sites of special scientific interest	Natural England	MAGIC
Special areas of conservation	Natural England	MAGIC
Special protection areas	Natural England	MAGIC
Burial grounds 2006	Department for constitutional affairs	CLG
Doorstep greens	Natural England	MAGIC
Millennium greens	Natural England	MAGIC
Green Pennant parks 2004-05 and 2005-06	CLG	Keep Britain Tidy
Green Flag parks 1998-2007	CLG	Keep Britain Tidy
Green Heritage Site winners 2004-05	CLG	Keep Britain Tidy
Green belt	CLG	MAGIC
Village greens	DEFRA	MAGIC
Heritage coast	Natural England	MAGIC
National parks	Natural England	MAGIC
Ramsar sites	Natural England	MAGIC
Community forests	Forestry Commission	MAGIC
Woods for people	Forestry Commission	Forestry Commission
Woodland Trust sites	Woodland Trust	MAGIC
Grass pitches	Sport England	<i>Active places power gateway</i>
Synthetic pitches	Sport England	<i>Active places power gateway</i>
Athletics tracks	Sport England	<i>Active places power gateway</i>
Golf courses	Sport England	<i>Active places power gateway</i>
Registered parks and gardens	English Heritage	MAGIC
Scheduled monuments	English Heritage	MAGIC
RSPB reserves	Royal Society for the Protection of Birds (RSPB)	MAGIC
National Trust land holdings	National Trust	National Trust

These datasets not only contain information about types of green space, but also record information about policy designations and other characteristics of green spaces, such as whether they are designated as greenbelt or sites of special scientific interest or are operated as bird reserves or woodland sites. In many cases, information in these datasets overlaps. For example, often a single green space includes a range of different types of space, for instance both a nature reserve and a sports pitch. This space could, therefore, appear in two or more categories.

The list above does not explicitly include the open space that is owned and managed by registered social landlords as these spaces are invisible in national data collection.

Furthermore, there is currently no single source of information about play spaces available at a national level.¹² Play England, the organisation that promotes play nationally and is helping to deliver the government's play strategy, is working on a project to evaluate current practice for recording play space information and is assessing the feasibility of creating a national map of play.¹³

Identifying themes to structure research analysis

The review of data sources looked in detail at the different measures and indicators contained *within* existing data sources that capture some element of green space, its qualities and people's attitudes towards it. Common themes were identified across disparate datasets and measures were identified that could be used to structure and organise our extraction of data.

This review was wide-ranging, looking across Europe, North America and Australasia for relevant examples. It concentrated on extensive measures covering a whole country or territory or a group of cities, rather than indicators covering one space or a group of spaces. The long list of the indicators identified as relevant is in appendix 2.

Fifty two individual indicators were analysed in more detail to help us understand what information can be collected about green space, and prioritise issues within our analysis. The results of this review are summarised in appendix 3. Based on this review the following themes were selected to represent, as far as is

possible using the data that already exists, a multi-faceted view of green space:

- 1 **quantity**: by type of green space, including both absolute and relative amounts, available in urban areas
- 2 **quality**: including subjective assessments such as resident satisfaction and objective measures such as biodiversity
- 3 **use**: how people use green space
- 4 **proximity**: the physical location of green space in relation to where people live, and how far people have to travel to access different types of green space
- 5 **management and maintenance**: including information about spending, staffing and how well a space is looked after
- 6 **value**: capturing how important green space is to people.

These themes formed the structure of the subsequent analysis. In particular, we looked for connections between different aspects of green space and the local environment, taking account of wider socio-demographic factors, location, housing density and other issues.

Subsequent chapters of this report set out the results of this analysis.

Establishing core indicators

The project devised a set of core key indicators to form a baseline for measuring trends in the future. These indicators had to achieve various things: they needed to provide a rounded picture of urban green space covering all the identified themes; they needed to be robust, based on reliable and respected data sources available consistently across most of urban England; and they had to be easily replicable so that they can be updated without difficulty in the future.

¹² This study used Ordnance Survey Points of Interest information that lists most structures, buildings and land uses other than residential homes and includes play parks.

¹³ www.playengland.org.uk and www.playengland.org.uk/localplayindicators

Sources of existing data were scrutinised in relation to their underlying geography – the lowest spatial unit for which results could be analysed – and their content. Survey questions and variable lists were considered in detail in order to establish what fresh data analysis could be carried out by combining data sources or by isolating specific questions. Appendix 4 sets out the long list of potential indicators considered, with their data source identified.

The following key indicators, identified by theme, were selected:

Quantity

QN1 green space (hectares) per thousand population

QN2 area (hectares) used for sports/leisure per thousand population

Quality

QL1 number of Green Flag-awarded parks per local authority

QL2 percentage of households satisfied with local areas as a place to live

Use

U1 percentage of people using green space by frequency

U2 percentage of people who are physically active

Proximity

P1 number of homes within 300 metres of a natural green space of at least two hectares

P3 measure of proximity to green space for those in the most deprived areas

Management and maintenance

MM1 resident satisfaction with local authority parks and open space service

MM2 annual spend on parks per head of population

MM3 cleanliness and maintenance of green space

MM4 status of green/open space strategies

Value to local people

V1 percentage of people who think that local parks and open spaces are important in making somewhere a good place to live

V2 percentage of people who think access to nature near to where they live is important.

As a group, these indicators cover a range of dimensions of urban green space. However, the data for some indicators is more robust and comprehensive than it is for others. For instance, we know much more about the cleanliness of parks than their value to people. Datasets provide information on the *condition* of public spaces but not on their design or functional quality. We know how clean and well maintained spaces are but not how valuable, vibrant or well used they are.¹⁴

It was the intention to consider the skills of the green space sector. However, existing data collection records very little information about the green space workforce. CABE's *Skills to grow* strategy sets out seven priorities to improve green space skills.¹⁵ This programme of work includes research, for the first time, on the size and scope of the green space sector nationally and aims to provide benchmarks to measure progress in tackling skills deficits in the green space workforce.¹⁶

Creating an inventory of urban green space

It was beyond the scope of this project to build a comprehensive information resource on urban green space in England. The CABE Space briefing *The green information gap: mapping the nation's green spaces* sets out the challenges involved in doing so. There are ways forward, however.

For instance, in Scotland, Greenspace Scotland, with support from the Scottish Executive, has already made good progress in creating an inventory of urban green space using GIS maps, aerial photography and data from local authorities. The inventory includes data about quality, quantity and use of green space and will provide a valuable benchmark from which policy can be formulated and its impact monitored.¹⁷

Our research study, in the process of drawing together all national data relating to urban green space, has created the first attempt at an inventory of urban green space in England.

¹⁴ *Understanding the links between the quality of public space and the quality of life: a scoping study*, Heriot-Watt University in conjunction with Oxford Brookes University for CABE Space, 2007.

¹⁵ *Skills to grow: seven priorities to improve urban green space skills*, CABE Space, 2008.

¹⁶ *Green space skills 2009: National employer survey findings*, CABE Space, 2009.

¹⁷ *State of Scotland's greenspace*, Greenspace Scotland, 2009.

The resulting inventory includes records for more than 16,000 individual green spaces in 11 categories (table 2). Each record contains an estimate of size (hectares) and the space's geographic location.¹⁸

Although incomplete, this is the first time that this data has been collated into one database.

Although the inventory will only go so far in filling the gap in national information about England's green space, it is nonetheless an important step in the right direction and provides the basis for most measures of quantity and proximity in the report.

Table 2: Contents of the inventory (all urban authorities, England)

Green space type	Count	Area (ha)	Data
Allotments	997	1,356.8	Allotment sites 2004-05
Cemeteries	1,643	3,679.1	Burial grounds 2006
Community farms	197	472.8	Community gardens and city farms 2004-05
Country parks	72	5,756.9	Country parks
Doorstep greens	82	140.3	Doorstep greens
Golf courses	361	5,720.6	Golf courses
Grass pitches	10,243	8,170.4	Sport England/Fields in Trust
Millennium greens	91	164.5	Millennium greens
Nature reserves	663	14,308.0	National nature reserves; local nature reserves
Parks	1,770	52,243.2	Registered parks and gardens 2008; <i>Public parks assessment</i> ; Green Flag parks 2005-06; Green Flag parks 2006-07
National Trust	128	14,537	National Trust
All types	16,247	106,549.6	

¹⁸ Synthetic pitches, ski slopes and running tracks were excluded from the inventory, and only grass sports facilities were included.

In terms of the robustness and reliability of the inventory, the following practicalities should be noted.

First, as far as possible, the inventory aimed to avoid duplication of spaces across different categories. Some of the datasets included an underlying list of spaces that could be extracted from the data file and overlap could be identified. However, because different sources were held in different formats and were created by different organisations for different purposes, variations in naming conventions, particularly local authority names and individual site names, made eliminating duplicates time-consuming. Therefore inevitably there was some double- or treble-counting of spaces that include more than one facility, such as a park with sports pitches and nature reserve status.

Second, it would have been desirable for as much data as possible to be supplied with shape files or boundary files, so that parks and green spaces could be mapped in GIS. Some shape/boundary files were available to our researchers, and these were used wherever possible. However, many of the entries in the inventory had no boundary data attached to them, and so were represented by circles equivalent to the known, or estimated, size of the space.

Third, the inventory developed for the purpose of this study was compared with the PPA, the only other attempt to survey urban green spaces in England.¹⁹ This was in order to obtain a quick and crude comparison of extent of coverage. The CAGE inventory records a total of approximately 12,000 parks and recreational spaces. The PPA dataset records a total of 14,600 such spaces. Thus the CAGE inventory seems to include about 82 per cent of the parks and recreational spaces included in the PPA. If the figures for park area are compared, the CAGE inventory covers around 87 per cent of the area accounted for by the 2001 PPA dataset.

Finally, some sources of data proved to be particularly useful in this research; but despite their usefulness, each has significant shortcomings. These shortcomings are summarised in appendix 5.

Glossary

The study analysed statistically a number of key indicators, and other sets of data, to see if any useful underlying trends or correlations could be found. The processes referred to include:

Regression analysis This looks at the strength of relationships between the different data collected. In particular, we looked for connections that might be apparent between different aspects of green space and the local environment, while taking account of a wider range of issues such as socio-demographic factors, locational factors, and issues to do with urban form – such as housing density.

Logistic regression This is a regression analysis technique used when the data is expressed in binary form, such as 'good' or 'bad'; 'satisfied' or 'unsatisfied'.

Ordinary least squares This is a technique used to analyse variables that take a continuous form, such as the number of times people use the park in a year, which could be any number between 0 and, say, 500.

¹⁹ There is some lack of clarity about which types of spaces were included in the PPA. It is, however, unlikely that it included cemeteries, allotments or golf courses, so these were excluded from the comparison.

2 Quantity of urban green space

It may seem extraordinary that no one knows how much publicly accessible urban green space there is in England, but quantifying it does pose some methodological questions. One issue is how to define exactly what should be counted – for instance, some very well-used urban green spaces are not ‘official’ parks or gardens at all, some do not even have names and many are not easily identifiable as a single space. Many provide multiple functions, making their classification tricky. Even those parks and gardens that are run by local authorities can be known locally by different names, adding to the potential confusion. The problem is compounded by the fact that those organisations that do collect data on the quantity of urban green space tend to use different definitions, and usually exclude spaces around social housing that, for many people, could be their most important local green space.

Measuring the quantity of green space: about the data

Quantity is an important measure of green space because, regardless of its quality, the total amount of green space available does still matter. Low average amounts of green space may mean that in some neighbourhoods there is effectively none available, while even where there is some green space it may be degraded through overuse or conflicting uses.

Research demonstrates that people who live in the greenest neighbourhoods experience lower all-cause mortality and lower mortality from circulatory diseases than similar people living in less green neighbourhoods.²⁰ This, and other evidence, demonstrates that living in a literally greener and leafier neighbourhood is good for your health regardless of your economic circumstances.²¹

The quantity of green space available also delivers critical environmental services, offering a working landscape: living roofs, large trees and soft landscape areas to absorb heavy rainfall; a network of areas for effective flood protection and the cleaning and cooling of air.²² The ability to deliver these services effectively is influenced by the level of quality, which is discussed in more detail in the following chapter.

Furthermore, the quantity and quality of green space is an important factor in attracting people to areas and retaining residents. In the British Household Panel survey, respondents were asked to give reasons why their area was a good or bad place to live. 44 per cent of the reasons given related to public space. Furthermore, the Survey of English Housing asked respondents to list the three main things that would improve their local area. Issues relating to aspects of public space were cited as many times as factors relating to employment, health and housing.²³

20 Mitchell, R and Popham, F, 'Effect of exposure to natural environment on health inequalities: an observational population study', *The Lancet*: 372 (2008), 1655-60.

21 For example de Vries, S, Verheij, R A, Groenewegen, P P and Spreeuwenberg, P, 'Natural environments – healthy environments? An exploratory analysis of the relationship between greenspace and health', *Environment and Planning A*, 35: 1717-31, 2003.

22 *Grey to green: how we shift funding and skills to green our cities*, CABE, 2009.

23 *Understanding the links between the quality of public space and the quality of life: a scoping study*, Heriot-Watt University in conjunction with Oxford Brookes University for CABE Space, 2007.

Generalised Land Use Database

The most complete source of data about the area of green space in urban England is the Generalised Land Use Database (GLUD), held by Communities and local government (CLG). GLUD was derived using an automated method of classifying Ordnance Survey map data into nine land categories and one 'unclassified' category. It provides figures for land type for all of England as at January 2005. From the point of view of quantifying urban green space in England the data from GLUD has several strengths.

First, it is complete, in that it covers all of England's urban areas. Second, the categories are mutually exclusive so that no parcel of land can be included more than once. Third, it separates out both paths and roads, meaning that the measure of green space is relatively accurate.

However, GLUD also has a major drawback: its 'green space' category covers a wide range of green space types including farmland, woodland, allotments, parks, playing fields and cemeteries – although excluding domestic gardens. Much of this, particularly farmland and woodland, is private land. Consequently, any data about the quantity of public urban green space derived from GLUD is over-generous.

This study therefore adopts two definitions of quantity of urban green space: a 'broad' definition whereby GLUD data is used; and a 'narrow' definition where other sources of information about quantity of space are used with the aim of focusing on parks and public green spaces only.

All of these data sets have disadvantages: some of them are incomplete in that they do not cover all of England's urban areas; some of them are missing vital information, such as the name of each space or its area. Furthermore, information on green space owned and managed by social landlords is absent in national information collection.

The quantity indicators

QN1 Green space (hectares) per thousand population

QN2 Area (hectares) used for sports/leisure per thousand population

The study calculated urban green space quantity in two ways: green space in hectares per thousand population (QN1)²⁴ and area in hectares for sports/leisure per thousand population (QN2).

QN1 was calculated as a 'broad' measure of green space using GLUD data. And as a 'narrow' measure using data from this project's green space inventory or other sources, such as the Chartered Institute of Public Finance and Accountancy (CIPFA) *Leisure, culture and recreation* statistics (2007/08) and the *Municipal year book* (MYB), which holds incomplete data on green space.²⁵

QN2 was calculated using the study's green space inventory, which includes a measure of the area of recreation grounds taking the form of grass pitches, derived from Sport England Facilities data (2009) that is comprehensive. This excludes all-weather pitches and some other types of facilities.²⁶

²⁴ There are notable problems with calculating QN1: first, whether to use the 'broad' measure of green space derived from GLUD which includes farmland, golf courses and so on, or a 'narrower' measure derived from the CABE green space inventory or CIPFA *Leisure, culture and recreation* statistics 2007/08 combined with the *Municipal year book* 2008 data. Second, official population estimates are not available for small areas, which has an impact on accuracy.

²⁵ <http://cabeyurl.com/ad> and www.cipfa.org.uk 2008 *Municipal year book* data used.

²⁶ www.sportengland.org

What the quantity indicators tell us

Regional variations

The general picture across the regions outlined below is that the South East, South West and East Midlands score relatively well while London and the West Midlands score rather poorly (table 3).

Table 3: Green space (hectares) per thousand population – ‘narrow’ measure

Region	Green space (hectares) per thousand population	
	CABE inventory data	CIPFA and MYB data
North East	1.77	1.55
Yorkshire and the Humber	1.82	1.83
North West	1.61	1.86
East Midlands	1.92	3.25
West Midlands	1.36	1.67
South West	2.45	2.70
East of England	1.49	2.37
South East	2.86	3.25
London	1.24	1.24

The mean scores for urban England are 1.79 (if the quantity data is taken from the inventory), or 1.98 (if quantity data is derived from CIPFA and MYB).

The Association of Public Service Excellence (APSE) manages a benchmarking club enabling authorities to benchmark against other authorities in the UK. Data on a number of performance indicators is collected. Performance indicator 30 measures hectares of maintained public open space per 1,000 population. Data was available for 64 local authorities. Among the local authorities in the APSE group the maximum score was 7.8 hectares per 1,000 population; the average score was 4.17; and the lowest score was 1.33. The APSE group includes some rural areas which are likely to have greater quantities of green space, and so would have higher values.²⁷

Quantity varies according to urban typology

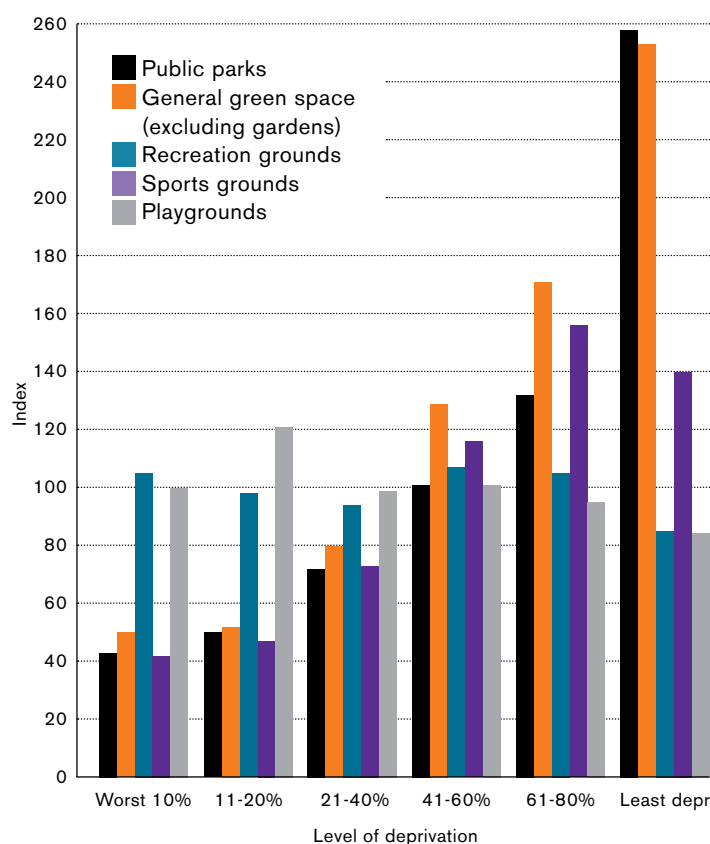
When considering urban typologies, suburban areas appear generally to have a larger quantity of parks and green space than urban areas. However, urban/city areas are better off for recreation grounds and sports pitches. This is, perhaps, what might be expected. These patterns are also associated with density

– generally, there is a good quantity of provision in the lowest density areas, with less green space in intermediate and higher density areas. For instance, wards with fewer than 20 dwellings per hectare have three times as much green space as wards in all higher density bands. Although inner London scores generally poorly in terms of quantity of green space, it appears to be better provided with children’s playgrounds.

Deprived areas have far less green space than affluent ones

On most indicators tested (including both ‘narrow’ and ‘broad’ definitions of quantity) deprived areas have markedly less green space than average, while the least deprived areas have the most. Figure 1 illustrates quantity and type of green spaces by the level of an area’s deprivation.

Figure 1: Quantity and type of green space and area deprivation



Sources: CIPFA Leisure, culture and recreation statistics 2007/08 and *Municipal Year Book* (recreation grounds); CABE Space urban green space inventory (public parks); Generalised Land Use Database (general green space); Sport England Facilities data 2009 (sports grounds) Ordnance Survey Points of Interest information (playgrounds). All measures based on area (hectares) of green space per 1,000 population. Deprivation calculated using the Index of Multiple Deprivation 2004.

27 www.apse.org.uk

The most affluent 20 per cent of wards have five times the amount of parks or general green space (excluding gardens) per person than the most deprived 10 per cent of wards. People who are not working because of unemployment or sickness – individual markers of deprivation – tend to live in areas with a lower quantity of green space. Similarly, people studying or training also have lower quantity scores for general green space and parks.

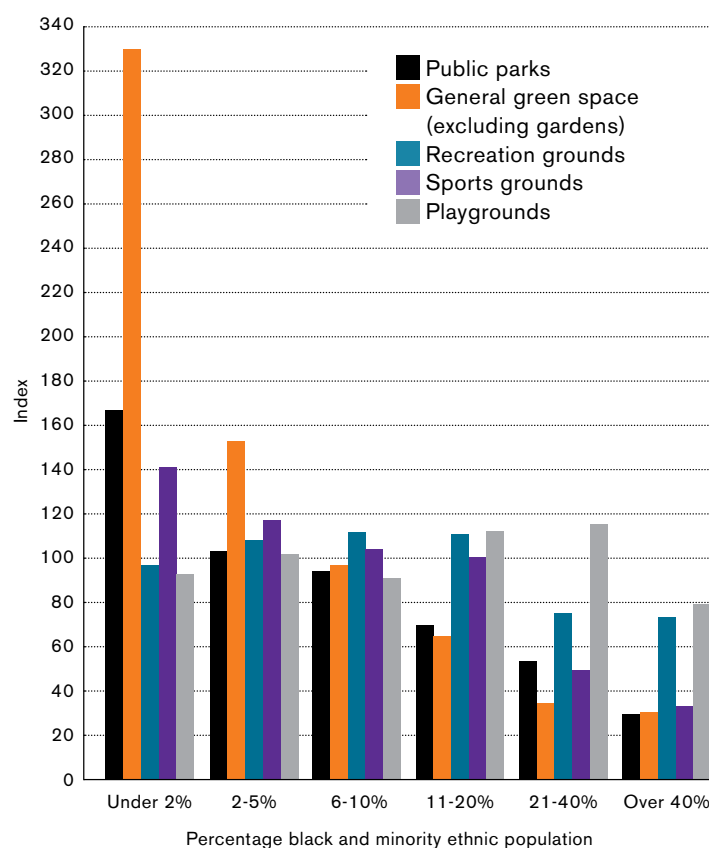
For most types of green space, social renters and private renters have less quantity than owner-occupiers, except for children's playgrounds and recreation grounds. It is important to note that it was not possible to include social housing green spaces in analysis. This will have an impact on results.

Data was also analysed by ethnicity (figure 2). People from minority ethnic groups tend to have less local green space. The inequality of provision also correlates strongly with the proportion of black and minority ethnic people living in an area: places with high proportions of black and minority ethnic residents have far less green space. Areas that have almost no black and minority ethnic residents (fewer than 2 per cent of their population) have six times as many parks than wards where more than 40 per cent of the population are black or minority ethnic residents. Using a 'broad' definition of quantity of green space, not just parks, this difference is around 11 times.²⁸

This may be because inner urban areas, which tend to have a lower quantity of green space, also tend to have a higher proportion of black and minority ethnic communities. We also recognise that the results are intimately related to the circularity of disadvantage – black and minority ethnic communities are more likely to be living in areas of deprivation which have markedly less green space than average.

The picture is more positive in regard to recreation facilities and playgrounds. Indeed, areas with an intermediate level of black and minority ethnic residents (between 6 and 20 per cent of population) have a relatively high level of provision of recreation grounds, while playground provision is also relatively high for wards with between 11 and 40 per cent black and minority ethnic residents.

Figure 2: Quantity and type of space by black and minority ethnic population



Sources: CIPFA Leisure, culture and recreation statistics 2007/08 and *Municipal Year Book* (recreation grounds); CABE Space urban green space inventory (public parks); Generalised Land Use Database (general green space); Sport England Facilities data 2009 (sports grounds) Ordnance Survey Points of Interest information (playgrounds). All measures based on area (hectares) of green space per 1,000 population.

²⁸ Gardens not included.

3 Quality of urban green space

The quality of parks and green spaces is one of the most important elements of their value, both to individuals and to society as a whole. For instance, if a local park is derelict and overgrown, it is unlikely to be used much by many of the people who might benefit from it, such as children, parents and the elderly. Because of this, a small, well-designed and well-maintained park may be far more valuable to a community than a large but neglected space. This can be true of environmental performance, too: a large area of mown grass might have little ecological value, whereas a small well-planted space could be rich in biodiversity. In other words, simply knowing the size of a green space tells us little about its value. Other aspects need to be understood and enumerated – and there are many different sources of data that attempt to do this.

Measuring the quality of green space, like measuring its quantity, is not straightforward. There is no national standard for quality or national quality criteria for open spaces. Assessments will rely on a combination of objective and subjective observations and provide a snapshot in time only. CABI Space's best practice guidance, *Open space strategies*, discusses these issues in more depth.²⁹ In addition, Greenspace Scotland's guide to green space quality sets out specific green space quality indicators.³⁰

Measuring the quality of green space: about the data

There are, however, a variety of measures that capture aspects of the quality of urban green space, covering a number of dimensions of quality. These include important, but subjective, aspects such as user perceptions and ratings, found in Best Value Performance Indicators (BVPI), the *Place survey* and GreenSTAT, and more objective measures such as biodiversity, which are reflected in Green Flag awards, and data from the Royal Society for the Protection of Birds and the Environment Agency.

However, while the range of measures is very useful, many of the underlying data sources are not comprehensive in that they only include a proportion of urban green spaces.

The Green Flag awards

The Green Flag award scheme is a voluntary annual awards scheme for all types of public green space and provides a national quality benchmark for green spaces.³¹ Local authorities or other owners or managers of green spaces can enter spaces for an award, and have to pay a fee for each space they enter. Uniquely, the awards are based on a holistic view of what makes a good green space, rather than a single indicator.

The space is judged in two ways. First, management information – in particular the site's management plan – is assessed and judged against a number of criteria. Second, accredited Green Flag judges visit the site and are able to ask questions of the site's managers, maintenance workers, and often members of community groups too. The site is then scored against the following criteria: Is it a welcoming place? Is it healthy, safe and secure? Is it well maintained and clean? Is it managed sustainably? Does it respect and enhance

²⁹ *Open space strategies: best practice guidance*, CABI Space and Mayor of London, 2009.

³⁰ *Greenspace quality: a guide to assessment, planning and strategic development*, Greenspace Scotland, 2008.

³¹ www.keepbritaintidy.org/GreenFlag

conservation and heritage? Is the local community involved? Is it well promoted? Is it well managed? If the park scores above a certain level, it will be given an award which is valid for one year. The scores are weighted, so that if a site scores very highly on some aspects, but very poorly on others, it will not win its award. Similarly, the management systems and information, as judged by the management plan, have to be of a certain quality. In other words, a site that is very well maintained, but has poor strategic management, will usually not get an award – even if the site itself looks attractive.

Although the fact that a space has achieved a Green Flag award is a good indication of its quality, Green Flag is a voluntary scheme. The fact that a space does not have an award should not be taken to imply that it is of poor quality – it may simply not have been entered.

GreenSTAT

GreenSTAT is a system that gives local residents the opportunity to comment on the quality of their open spaces and how well they feel they are being managed and maintained.³² It allows site managers to compare the results with others up and down the country.

GreenSTAT data contains user feedback about use, facilities, design and appearance, maintenance and overall satisfaction. GreenSpace manages GreenSTAT. Its data sharing agreement with the local authorities that subscribe to it means that results for measures based on GreenSTAT can only be reported here in relation to regions, or groupings of local authorities, rather than individual authorities.

BVPI and the *Place survey*

BVPI surveys of residents were undertaken every two years until 2006. The surveys collected information about satisfaction with neighbourhood quality and local authority services. This included a number of questions about local green space such as the frequency of park use, views about nature and satisfaction with the authority's parks service. From 2008, the BVPI survey was replaced by the *Place survey* which has a similar purpose.

Place survey results were published in early 2009. However, the data released for publication was not comprehensive at the time of this study. As a result, the majority of analysis here draws on BVPI data.

UK Sustainable Development Indicators

The UK Sustainable Development Indicators are a suite of 68 indicators that are updated annually. Appendix 2 sets out the indicators relevant to this study. Two indicators were analysed here. Indicator 60, the percentage of populations living in areas with the least favourable environmental conditions, and Indicator 65, which assesses local environmental quality using Keep Britain Tidy data.

What the data does not tell us

Some elements of quality in public parks and open spaces are never measured directly or are measured only rarely, for instance design quality or usability.³³ Many of these, such as design quality, are very difficult to measure and express numerically – although the Green Flag award does attempt to capture some of these more elusive values in a numerical form. However, the fact that something is not easy to capture statistically does not mean that it is not important, and this should be borne in mind when considering the data below.

The quality indicators

QL1 Number of Green Flag-awarded parks per urban local authority

QL2 Percentage of households satisfied with local area as a place to live

The study examined two core indicators indicating quality of green space: number of Green Flag awards per urban authority (QL1) and percentage of households satisfied with their local area as a place to live (QL2).

QL2 is based on data from the 2006 BVPI survey.³⁴ Headline results for satisfaction with local area, using *Place survey* data, are reported here only. In addition to the QL1 and QL2 core indicators, other indicators of environmental and green space quality, derived from BVPI and the UK Sustainable Development Indicators, were analysed. These included whether residents think that open spaces have got better or worse.

Indicators about the quality of, and satisfaction with, the broader green space service provided by local authorities are discussed in chapter 6.

³² www.greenstat.org.uk

³³ *Understanding the links between the quality of public space and quality of life: a scoping study*, Heriot-Watt University in conjunction with Oxford Brookes University for CABE Space, 2007.

³⁴ <http://cabesurl.com/b7>

What the quality indicators tell us

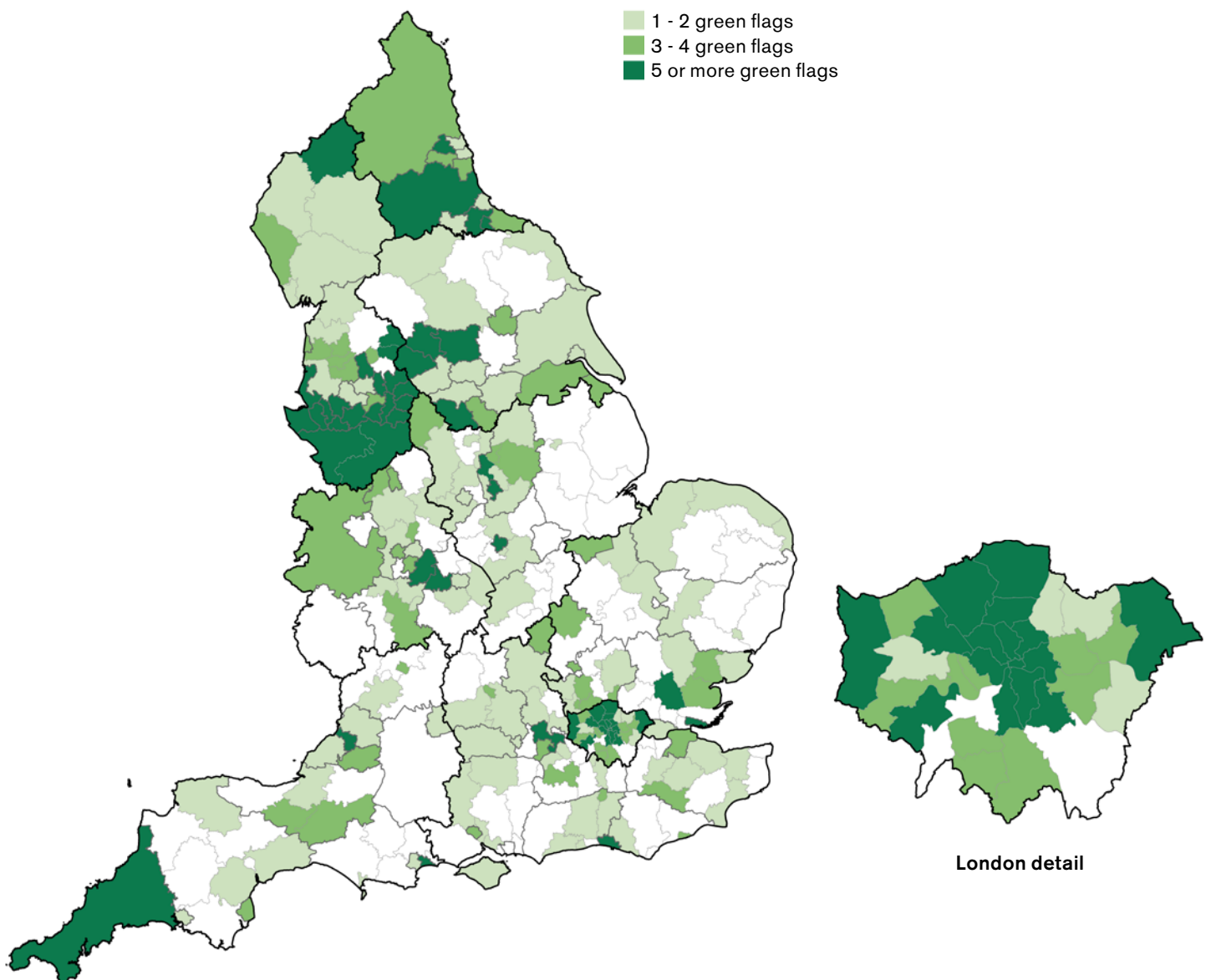
Increasing numbers of Green Flag awards

Green Flag awards are one indicator of quality in urban parks. The number of urban parks receiving awards rose from 487 in 2008/09, to 594 in 2009/10.

In 2008/09, 120 of 154 (78 per cent) of urban authorities in England had one or more Green Flag award. In 2009/10, 135 of 154 (81 per cent) of urban authorities in England had one or more Green Flag award.

The map below shows the incidence of Green Flag parks in 2009/10. Among other things, it does show that a few local authorities win the majority of the awards.

Map 1: Number of local authorities with Green Flag Awards, England and London (2009/10)



The table below sets out the top 14 urban local authority recipients of Green Flag awards in 2009/10. Between them, these authorities accounted for 190 out of 594 awards, 32 per cent of the total.

Table 4: Top Green Flag award-winning local authorities 2009/10

Authority	Number of awards
Manchester	30
Westminster	18
Liverpool	16
City of London	14
Hillingdon	13
Halton	12
Stockport	12
Haringey	11
Nottingham	11
Bury	11
Tameside	11
Wirral	11
Sheffield	10
Newcastle upon Tyne	10

What the Sustainable Development Indicators tell us

Indicator 60 of the UK's Sustainable Development Indicators measures the percentage of populations living in areas with the least favourable environmental conditions.³⁵ Analysis of this shows that a higher proportion of people living in the most deprived areas live in places with the least favourable environmental conditions. The indicator tracks air pollution, industrial releases, green space, habitats favourable to biodiversity and so on. In the most affluent areas, less than 0.5 per cent of the population experience more than three least favourable environmental conditions; in the most deprived areas it is 22 per cent.

In addition, Sustainable Development Indicator 65 assesses local environmental quality and is based on Keep Britain Tidy data which evaluates a sample of sites in relation to a range of issues that include litter, dog fouling, detritus, fly-tipping, graffiti and so on. Analysis of this indicator found 53 per cent of local environments in England are deemed unsatisfactory or poor.

Satisfaction with area and quality of green space

QL2 measures the proportion of respondents very or fairly satisfied with their local area as a place to live. *Place survey* data shows that 80 per cent of people in England are very or fairly satisfied with their local area as a place to live. This is a good general indicator but people could be reflecting other attributes of their neighbourhood in their response.

Published *Place survey* data was not comprehensive at the time of this study. QL2 figures below use BVPI data.

In addition to QL2, two other quality indicators from BVPI were analysed: the proportion of residents that think that the quality of parks and open spaces in their area got better or stayed the same in the last three years; and the proportion that think that parks and open spaces are an aspect of the area that most needs improving. Both of these depend, to some extent, on the expectations and aspirations of residents.

Patterns in quality of provision

Overall, there are quite strong north-south and urban-suburban patterns in these quality indicators. Quality is better in the South West, followed by the East of England and South East, and poorer in the three northern regions, particularly the North West. However, these differences are not very dramatic in regard to the two indicators QL1 and QL2. The West Midlands scores quite well on general satisfaction, while the East of England is less good on this indicator.

Quality is better in suburban areas generally and southern urban areas in particular; better in central London but poor in inner London and to some extent outer London too. Town fringe areas score well in the south but less well in the north – more of these may be peripheral council estates or peri-urban former industrial areas. There is some evidence of a U-shaped relationship with density.

Quality in deprived areas

Importantly and in common with the measures of quantity in chapter 2, quality is systematically worse in deprived areas and better in less deprived areas. The difference is marked on QL2 with resident

³⁵ <http://cabeurl.com/af>. Data from 2007 release.

satisfaction with local area falling from over 80 per cent in the most affluent areas to around 50 per cent in the most deprived areas (figure 3). Quality is worse in areas with high levels of social renting and those that are long-term sick, disabled people and unemployed people report worse quality.

Young people's satisfaction

Young people aged between 16 and 24 report lower quality across all indicators analysed for the study. 15 per cent of 16-24 year olds think parks and open spaces are the aspect of their area that most need improvement, compared with 8 per cent of 55-74 year olds. This greater negativity among younger people may be related to the fact that they use parks and open space more, and thereby have more experience on which to form a view. It could be that parks and open spaces are not being designed and managed to meet their needs.³⁶

Black and minority ethnic people fare worse

Analysis of the data shows that quality is also worse in areas with a higher population of black and minority ethnic residents. The differences are more marked on the general area satisfaction indicator QL2. Only 50 per cent of residents in wards with more than 40 per cent of their population from black and minority ethnic groups are satisfied, compared with 70 per cent in wards with less than 2 per cent.

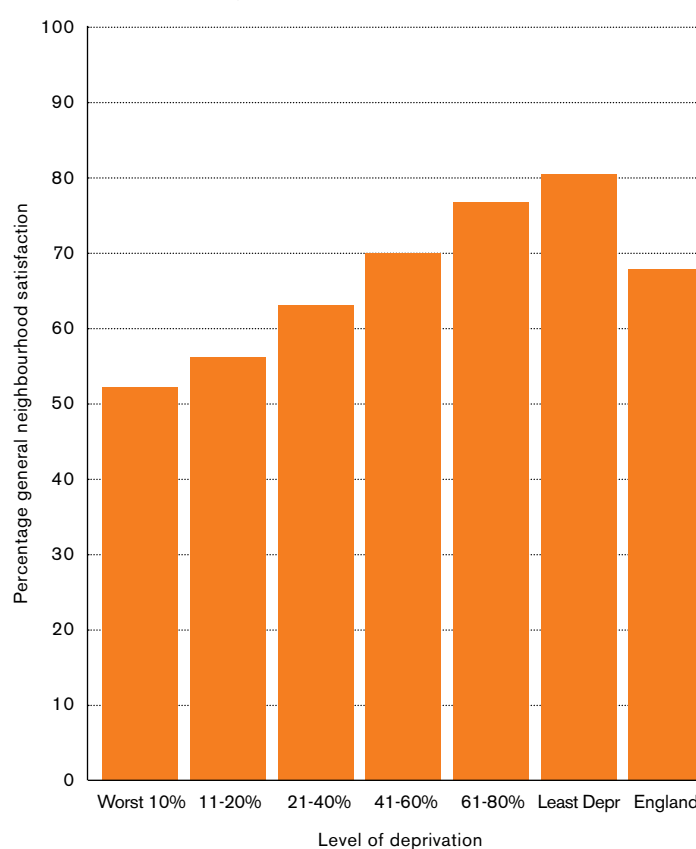
Black and mixed groups are less likely to think parks have improved, and Asian residents are more likely to say parks most need improving. However, these differences in score are not very large. Interestingly there is a more positive picture in areas with between 11 and 20 per cent black and minority ethnic residents - 70 per cent report that they are very or fairly satisfied with their local area as a place to live. The second part of the research explores this in more detail.³⁷

Modelling satisfaction with area

If we bring in evidence from the use of more sophisticated statistical techniques (regression analysis and logistic regression analysis) to predict the incidence of general neighbourhood satisfaction, the strongest explanatory variable tested³⁸ turns out to be satisfaction with the local authority's green/open space service.³⁹ This matters for local authority performance. There is a strong link between people's satisfaction with their local parks and their satisfaction with their neighbourhood.

Taken together with positive effects from quantity of broader green space and accessibility of parks, this provides tangible evidence of the connection between quality of green space and quality of life. Also very significant and positive is the effect of whether people think that parks and public open space or access to nature is important, discussed in chapter 7. People who value parks or nature are more likely to be satisfied with their neighbourhood as a place to live.

Figure 3: Percentage of households satisfied with local area by level of deprivation



Source: BVPI 2006 survey. Information for urban authorities only.

³⁶ Young people are often overlooked in community engagement. Spaceshaper 9-14 aims to get them involved in improving their local parks, streets, playgrounds and other spaces www.cabe.org.uk/public-space/spaceshaper-9-14

³⁷ See www.cabe.org.uk/publications

³⁸ The dataset created for this analysis did not include all the other neighbourhood satisfaction or quality of life indicators collected in BVPI, where these did not relate in some way to green/open space. Therefore we cannot rule out the possibility that some of the 'explanation' from the green space satisfaction variable may be (jointly) attributable to other or wider neighbourhood satisfaction/problem issues which are correlated – for example, crime/security issues.

³⁹ Chapter 6 looks at resident satisfaction with parks and open space services.

4 How often people visit urban green space

How many people use parks, and how often they use them, demonstrates people's appreciation of an area's green assets and reflects how valuable parks and green spaces are to communities.⁴⁰ Until recently, however, data on green space use was scarce. At a local authority level, parks often compete for funding with other leisure services such as swimming pools and libraries, both of which count their users. Without knowing how many people use parks, compared with these other services, it is difficult to make a strong case for funding them and plan across different timescales strategically.⁴¹

For those working in public health, as well as those in the green space sector, information about park use is, therefore, very valuable. Visiting parks and open spaces provides both physical and mental benefits and for many people is less off-putting and expensive than going to a gym. Research has shown the importance of green space as a setting for physical activity – and many of the sports people play take place at outdoor sports facilities, for instance football, rugby, and golf.⁴² Including this data here makes it possible to link green space to policy agendas around health and obesity.

The CABI Space publication, *Making the invisible visible: the real value of park assets*, explores the practicalities of measuring park use in more detail, including the limitations of this as an indicator.⁴³

Measuring the use of parks and green spaces: about the data

A number of data sources include information about the use of parks and green spaces. For instance, the *Place survey* 2009 and, before that, the BVPI surveys, report how often people use parks and open spaces generally, whereas GreenSTAT, for instance, looks at how much an individual space is used.

DEFRA's regular survey, *Public attitudes and behaviours towards the environment tracker study*, asks respondents about their attitudes towards key environmental issues such as energy use, climate change and the natural environment. This includes questions on the use of green space.⁴⁴

GreenSTAT is the only data source that offers information about why people use parks and open spaces. It does not have comprehensive data coverage as it is a self-completion questionnaire.

In addition, a less direct measure of park use, that has been included here, is a physical activity measure based on the Sport England *Active people* survey 2005/06. This is a large scale survey of people's leisure and physical activity in England.

Together these measures provide a useful account of how well parks and open spaces are used in England's towns and cities.

40 *Making the invisible visible: the real value of park assets* looks in more detail at measuring park use to indicate the value of green space.

41 www.cabi.org.uk/publications/making-the-invisible-visible

42 *Physical Activity and the Natural Environment, Natural England Evidence Sheet 3, 2003 and Building Health: Creating and enhancing places for healthy active lives*, National Heart Forum, in partnership with Living Streets and CABI, 2007.

43 www.cabi.org.uk/publications/making-the-invisible-visible

44 <http://cabiurl.com/9v>

The use indicators

U1 Percentage of people using green space by frequency

U2 Percentage of people who are physically active

The study looked at two core indicators of use. The first indicator, U1, gives frequency of visits to parks, taken from BVPI 2006. It is based on banded responses to the question about frequency of using parks and open spaces, in seven bands ranging from 'almost every day' to 'within the last year', 'longer ago' and 'never'.

Published figures for the 2009 *Place survey* include data about use of parks and open spaces in the last six months and the last year. At present the available data is far less detailed than the BVPI figures. Therefore, headline figures only are reported here (table 5).

The second indicator, U2, gives levels of physical activity, taken from the Sport England *Active people survey*, 2005/06. It is based on the number of days in the last four weeks respondents have walked, cycled or done sporting activities of at least moderate intensity for at least 30 minutes.

Table 5: Use of urban parks and open spaces in England

How frequently have you used the following public services?

Service	Percentage of people in last six months	Percentage of people in the last year
Parks and open spaces	79	87
Local tips/household waste recycling centres	79	87
Local transport information	54	68
Local bus services	58	67
Sport/leisure facilities	46	57
Libraries	49	60
Museums/galleries	24	38
Theatres/concert halls	29	45

Source: *Place survey* (2009) Information for urban authorities only .

Use: what the data tells us

Parks and open spaces are the most frequently used service of all the public services tracked as part of the *Place survey*, with respondents reporting higher use of parks than the other cultural and leisure services such as sport and leisure facilities and libraries.⁴⁵ In England 81 per cent of respondents have used their local park or open space in the last six months. This compares with 32 per cent that have used concert halls, and 26 per cent that have visited galleries.

In urban areas, 87 per cent of the population have used their local urban park or open space in the last year, and 79 per cent have used it in the last six months (table 5). This shows little change since 2006 (table 6).

However, it is worth noting that Greenspace Scotland's research⁴⁶ shows that there has been a marked increase in park use in Scotland during the last few years, with 63 per cent of people now using green spaces at least once a week compared with 49 per cent in 2005. Unfortunately it is not presently possible to track whether there has been a similar uplift in weekly park use in England using up-to-date *Place survey* information, as this level of detail has not been released.

The DEFRA tracker study *Public attitudes and behaviours towards the environment* asks respondents how often they visit public gardens, parks, commons or other green spaces.⁴⁷ In contrast to the results from Scotland, this reports an overall decrease in weekly use in England: in 2007 54 per cent of respondents said they used green spaces at least once a week,⁴⁸ compared with 48 per cent in 2009.⁴⁹

2006 BVPI survey

Analysis of BVPI data also found that 87 per cent of respondents had been to their local park in the last year. The frequency of park use was markedly above average in London, the South East and South West, and below average in the three northern regions, especially Yorkshire and the Humber (table 6).

45 <http://cabeurl.com/ah> Services tracked: parks and open spaces; local transport information; local bus services; sport/leisure facilities, libraries, museums/galleries and theatres/concert halls.

46 *State of Scotland's greenspace*, Greenspace Scotland, 2009.

47 Response rate of around 1,700 individuals.

48 <http://cabeurl.com/ai>

49 <http://cabeurl.com/ai>

Table 6: Percentage of people using parks and green space by frequency of use

Government region	Daily	Weekly	Monthly	Twice yearly	Yearly	Less than yearly	Never
North East	12.0	24.1	20.7	17.8	9.7	7.3	8.4
Yorkshire and the Humber	10.5	23.0	21.4	18.6	10.1	8.2	8.3
North West	12.0	26.5	20.6	17.0	8.7	7.1	8.1
East Midlands	13.3	25.6	20.7	16.3	9.3	6.9	7.9
West Midlands	11.5	24.7	20.9	16.9	9.3	8.2	8.5
South West	16.2	30.3	20.9	14.7	7.4	5.2	5.3
East of England	14.7	26.7	21.2	16.5	8.5	6.5	5.8
South East	16.2	30.0	20.9	15.2	7.1	5.0	5.6
London	16.7	31.9	21.4	13.5	6.3	4.6	5.6
Average	13.7	27.0	21.0	16.3	8.5	6.6	7.1

Source: BVPI Data.

Generally speaking, people in London and the south of England use parks more than people in the north of the country. This pattern is similar to the pattern found by the quality indicators – generally better quality in the south, poorer in the north – and the two are likely to be related.

Common sense tells us that a space that is well designed and well maintained – in other words, that is of a high quality – is likely to attract more people. Research from the Heritage Lottery Fund (HLF) shows that parks that have been restored with money from the fund have increased their visitor numbers by 68 per cent on average. This suggests that the link between the quality of the space and its use is very strong indeed. The HLF research also reports that there are 1.8 billion visits to parks in England every year.⁵⁰

The indicator U2, percentage of people who are physically active, shows a similar pattern, although the regional differences are less marked. The South East, South West and London have the highest levels of physical activity, while the West Midlands has the lowest.

Use of parks by urban typology

In areas of higher building density, parks and open spaces are used more. This may well be because people living in denser urban areas tend to lack gardens. Central and inner London have a markedly higher use of parks than city centres in other regions.

This could be because of the presence of the eight Royal Parks, and the 4,000 hectares of parks and open spaces run by the Corporation of London – all of these spaces are of a generally high quality. Given the strong link between quality and use suggested by the HLF research, the availability of these parks might be one factor accounting for the particularly high park use in London compared with other cities.

⁵⁰ HLF funding for public parks 1st April 1994 – 31st March 2009, Heritage Lottery Fund Policy and strategic development department data briefing, October 2009.

Use of parks in deprived areas

We have already seen that deprived areas have smaller quantities of parks and open space, and what they do have, is of a poorer quality than average. It is perhaps not surprising, then, that the data about use shows that in deprived areas fewer people use parks and open space, and those that do use them visit less than the average.

The most deprived 10 per cent of wards have a frequency of 51 visits per year, compared with 62 visits per year in the most affluent wards. However, the second most deprived band has a frequency of 60, underlining that the relationship is not so strong as with some other indicators. The urban form – the level of density of housing – does impact on use of parks. Those areas that are denser, with few gardens and a higher number of flats, tend to have higher levels of use. As expected, use of parks and formal green space is higher in the areas where residents have access to less private green space. Deprived areas tend to be of a higher density thus the nature of urban form could be offsetting deprivation to some degree. Park use is not particularly related to housing tenure.

However, people's levels of physical activity seem to be related quite strongly to affluence, or the lack of it. The most deprived wards have only 40 per cent of adults doing moderate physical activity regularly, while this rises steadily across the bands to nearly 60 per cent in the most affluent wards.

Taken as a whole, the strong correlations between the poor quality and quantity of spaces in deprived areas, and the low levels of physical activity of residents, suggest that policymakers who are keen to encourage better health in deprived areas should consider investing in improving the quality of parks and public space as one way of helping to achieve this.

Use of parks by different people

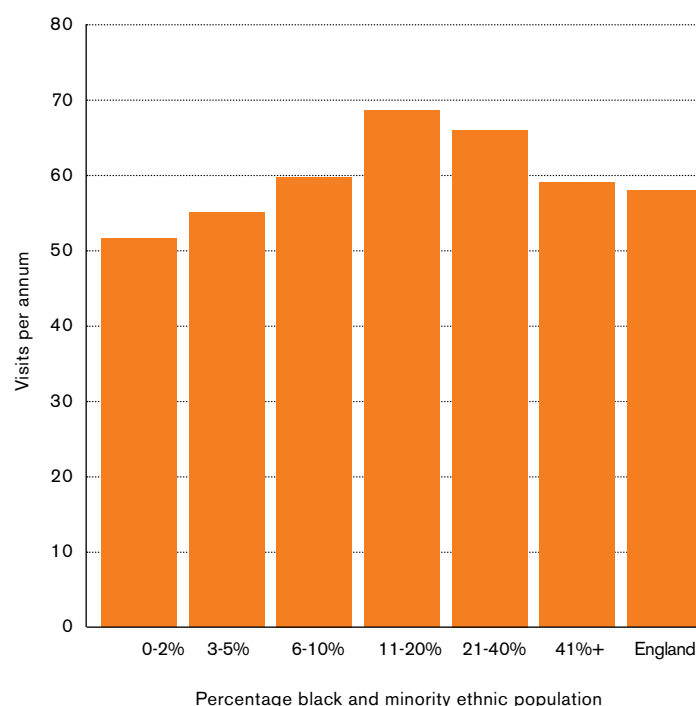
The Urban Green Spaces Taskforce observed that some sectors of society use green space less than others, particularly older people (aged over 65), people with disabilities, women, black and minority ethnic people and children and young people aged 12-19.⁵¹ This study confirmed these findings.

Overall, across the study, limiting longer-term illness or disability was found to be associated with lower satisfaction with neighbourhood, perceived lower quality of parks service, lower parks use and much lower physical activity.

The patterns of use of parks by black and minority ethnic communities were interesting and echo the research findings on quantity and quality of green space (chapters 2 and 3). Areas with intermediate proportions of black and minority ethnic people (between 11 and 40 per cent of ward population) made the greatest use of parks and open spaces (figure 4).

Black African and African-Caribbean people used parks the least, people from mixed/other ethnic groups had a higher frequency than average. Asian people were slightly more likely than other black and minority ethnic people to use parks at least once a year. The second part of research by CAGE Space looks at ethnicity and use in more detail.

Figure 4: Frequency of use of parks and green space by proportion of black and minority ethnic population



Source: GIS analysis of CAGE Space urban green space inventory, linked to BVPI survey and data compiled for *Transforming places* study (Bramley et al 2007).

⁵¹ *Green spaces, better places: final report of the urban green spaces task force*, DTLR, 2002.

In terms of physical activity, moderate physical activity is lowest in the areas that have a population of more than 40 per cent black and minority ethnic people and highest in those areas that have a population of between 10 and 20 per cent.

What can statistical modelling tell us about use and activity?

Using ordinary least squares regression for use frequency, we found some useful additional trends emerging from the data.

First, there is a moderate but significant link between the amount that people use parks and the distance they live from the nearest park: living closer tends to increase use.

There is also a positive link between people's satisfaction with the local parks service, how much they value parks or nature, and the amount they use parks. In other words, the data confirms what we might expect: people who value parks, and think their local parks are good, will tend to use them more.

One finding that is less self-evident, however, is that spending more on parks does not, in itself, lead to higher use. This could be because spending may be a proxy for more problematic, and hence costly, areas. We may not be spending enough to achieve better use.

Where the proportion of garden area is greater, the use of parks is less, suggesting an expected element of substitution.

5 Proximity of populations and access to urban green space

The proximity and accessibility of green space is especially important to people living in urban areas. The physical access to a place affects how people will benefit from it. Easy access to good-quality green places will provide enhanced well-being: a greater sense of belonging and feelings of security, stretching people's boundaries, promoting mobility and improving health.⁵² However, there is no nationally established methodology for measuring proximity.

Without an established methodology for measuring accessibility of green space there are various technical challenges to be resolved. These include whether to use distances 'as the crow flies' or the actual distances that people have to travel to reach a green space; whether to measure to the nearest park gate (if one exists) or the centre of the space; and what to do about neighbourhoods that are close to local authority boundaries so that the nearest space is provided by another authority. These issues make data gathering complex but nonetheless of great importance.

Proximity: about the data

Research by the Greater London Authority (GLA) into how access to nature can be improved considers proximity in relation to actual walking distances and entrances to spaces.⁵³ It also takes into account opening hours, entry charges, and the nature of the site itself. This approach is comprehensive and could form the basis for the measurement of proximity outside London.

However, this methodology requires a robust inventory of green spaces and detailed information about boundaries, access points and opening hours. The inventory of urban green spaces across England established for this project did not always have even basic information about the size or boundaries of some spaces. It was therefore not possible to emulate the GLA's approach.

Instead, this project constructed three measures of proximity using existing data. Essentially, they are all concerned with the distances to parks or green spaces and the size of the green spaces within short distances. There were considerable technical problems and choices to be made in constructing these measures.

The proximity indicators are based on demographic data and data about the distance from green space. They had to be calculated using several rather crude approximations. First, it was assumed that all of the population lives in the centre of a small area (unit postcodes, or small to medium super output areas).⁵⁴ Second, the distances used were as the crow flies, rather than the actual distance someone would have to travel following the road.

⁵² *Inclusion by design: equality, diversity and the built environment*, CABI, 2008 explores this in more detail www.cabi.org.uk/publications/inclusion-by-design

⁵³ *Improving Londoners' access to nature: London plan implementation report*, Mayor of London, 2008 <http://cabiurl.com/ak>

⁵⁴ For more information on super output areas see: <http://cabiurl.com/al>

The indicators are potentially particularly useful at the small area level, but their usefulness is dependent on the quality of information about green spaces within a given area. This research project calculated proximity to formal spaces that are documented in data collection. It was not possible to consider the multiple, informal green spaces that are arguably more important in the value that they contribute to communities.

The proximity indicators

- P1** The number of homes within 300 metres of a natural green space of at least two hectares
- P2** 'Proximate hectares' (will not be tracked as a core indicator)
- P3** The proximity to green space of people living in the most deprived areas

The study analysed three indicators of proximity using the CABE green space inventory data. Indicator P1 aims to measure the number of homes within 300 metres of a natural green space of at least two hectares. This is Natural England's accessible natural green space standard (ANGSt)⁵⁵, which sets a series of benchmarks for ensuring access to spaces near to where people live.

Because of data limitations, another indicator, P2, was also calculated, that of 'proximate hectares'. This measured the area of green space in distance bands from a given residential location, and divided the area by the square of distance in kilometres. So green space at one kilometre distance counts as one unit per hectare; at two kilometres it counts as 0.25 units, and so on. The researchers then added up all these weighted units across all the distance bands to give the number of 'proximate' hectares.

The third indicator P3, measures proximate hectares calculated for those living in the most deprived 20 per cent of neighbourhoods.

Given the data currently available, it was only possible to gain approximate results for P1. Using the inventory constructed for this project, we know the number of metres to the nearest park/space; and we have an estimate of the size of this nearest space. However, we know our inventory is probably

missing some parks and green spaces, and for those spaces that we do know about we lack comprehensive information about their boundaries. Consequently, although from the point of view of whether households have easy access to green space this measure is very useful, from the point of view of what robust information can be derived from existing data, the distance of 300 metres is too small. Therefore, the amount of green space within 500 metres was also examined, but this raised similar issues.

In view of this, a third proximity measure was devised, that of 'proximate' hectares, P2. This counts all spaces, regardless of whether or not they are in the same local authority area as the households. In other words, if you live near the boundary of one local authority area, but your nearest green space is just over the boundary in another local authority's area - then it will still be counted as your nearest green space. This is despite the fact that the population data will come from one source, and the green space data from another. Because the green space data comes from our inventory, it ignores any parks that are in adjacent non-urban local authorities. This creates a potential distortion near urban boundaries.

The proximate hectare measure was calculated separately for three population groups: those living in the most deprived 20 per cent of neighbourhoods (indicator P3); black and minority ethnic people; and those aged over 65 (these groups overlap).

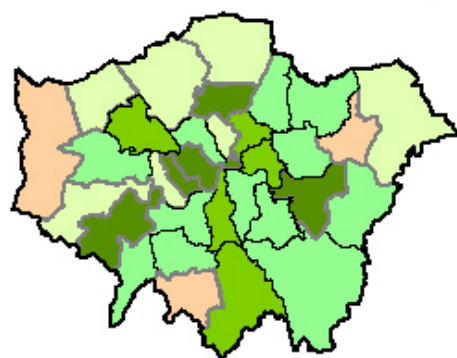
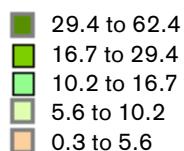
Proximity: what the data tells us

Indicator P1 looks at households that have green space within 300 metres (ANGSt standard). Bearing in mind the limitations of the data, as discussed above, it indicates that between 7 per cent and 18 per cent of households meet the ANGSt standard. The highest proportions are in the West Midlands (18 per cent) and the North West (17 per cent), followed by London (16 per cent); the lowest proportions are in the South East (8 per cent) and Yorkshire and the Humber (7 per cent).

The number of homes within 300 metres of natural green space of at least two hectares is illustrated in map 2 overleaf. Table 7 sets out the percentage of homes within 300 metres and 500 metres of a natural green space.

⁵⁵ <http://cabeurl.com/am>

Map 2: Homes within 300 metres of a natural green space of at least two hectares (percentage of addresses)



London detail

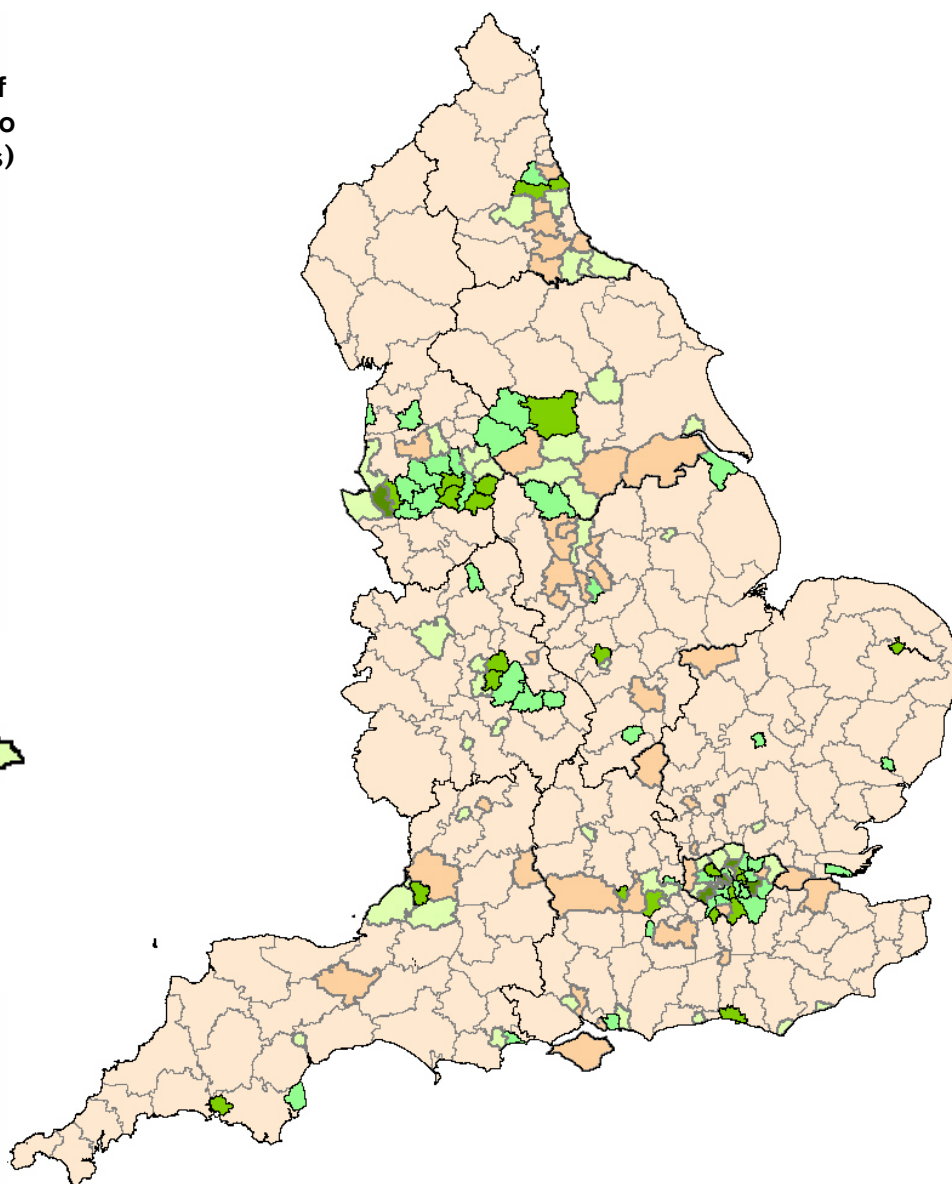


Table 7: Percentage of homes within 300 metres and 500 metres of a natural green space

Region	The percentage of homes within 300 metres of a natural green space of at least two hectares	The percentage of homes within 500 metres of a natural green space of at least two hectares
North East	8.4	17.5
Yorkshire and the Humber	7.4	15.9
North West	16.7	32.9
East Midlands	9.6	20.5
West Midlands	18.0	35.0
South West	13.6	24.9
East of England	11.8	23.6
South East	7.9	15.0
London	15.9	30.4
England	12.9	25.4

Source: GIS analysis based on the inventory of green space.

Proximity and urban form

The broader proximity indicator, P2, shows the highest scores in London and the South East, with the lowest scores in the East Midlands, Yorkshire and the Humber and the North East. Overall, 25 per cent of homes have a green space of some sort within 500 metres. It may seem surprising that households in London have the highest proximity to green space, but that is partly because proximity was measured by 'as the crow flies' distance, and London is the densest conurbation, where everything, including people and green spaces, is closer together.

Proximity and deprivation

Proximity is one dimension which is less negative for deprived areas. Deprived areas, including those with moderate deprivation, have proximity scores that are slightly above average, although the least deprived areas have the highest scores (figure 5). One reason for this slightly more positive picture would be the density effect described above. More deprived wards are typically also smaller and thus closer to other wards that may have better green space provision. Another reason may be that areas with high proportions of social renting have better physical accessibility to urban open space. This probably reflects the legacy of post-war town planning. It was not possible to explore this relationship in greater detail owing to the absence of national data on green spaces on social housing estates.

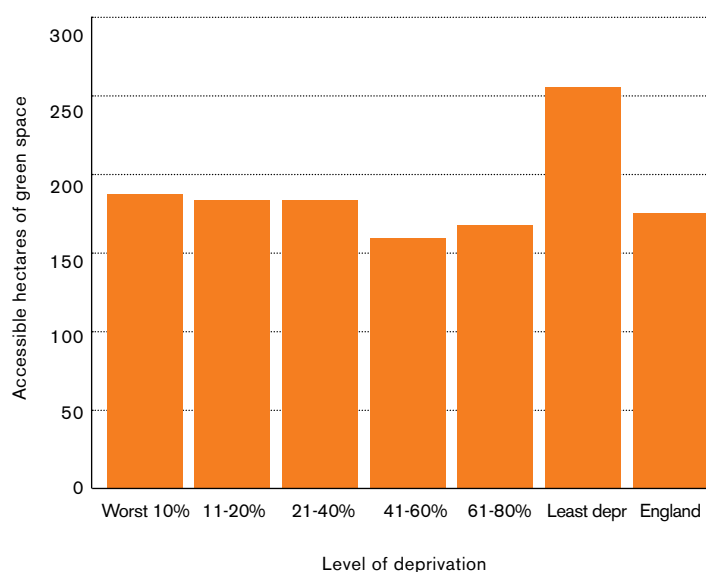
Proximity, socio-economic background and ethnicity

Analysis by socio-economic factors found that those that are 'long-term sick' and disabled people have slightly poorer proximity, whereas private renters and those studying or training have relatively high proximity.

As with use, according to data analysed here proximity is better for places that have intermediate levels of black and minority ethnic residents (between 11 and 40 per cent of area population).

Owing to the complexities of accurately calculating proximity to green space, this area of research will especially benefit from further analysis and exploration. The results of analysis reported here focus only on access to the green spaces that are documented in national data collection and therefore were present in the study's inventory.

Figure 5: Proximate green space area by level of deprivation



Source: GIS analysis of CABE Space urban green space inventory, linked to BVPI survey and data compiled for *Transforming places* study (Bramley et al 2007).

6 Management and maintenance of urban green space

Successful parks and green spaces are underpinned by good-quality management and maintenance. This will include a skilled and motivated workforce, sufficient capital and revenue resourcing and well-evidenced strategic planning. As vital local spaces for recreation, parks and green spaces need to be welcoming, well maintained and clean, and to meet the needs of local people. However, there is very little data about the way in which parks are managed and maintained, and almost nothing about who is doing this work, what skills they have – or even how many are employed in the parks and open space sector as a whole.

The theme of management and maintenance analysed a broad range of information sources. These included evaluation of sources of financial data, cleanliness and maintenance data, analysis of the status of green/open space strategies and consideration of existing data sources on skills within the green space sector. In addition, the levels of resident satisfaction with their parks and open spaces was analysed as a measure of overall success in the management and maintenance of this service.

Management and maintenance: about the data

The Green Flag award is, arguably, the only systematic assessment of the management of individual parks and green spaces, including reference to policy and strategy where appropriate. This source of data has been considered in the analysis of quality in chapter 3 and is not discussed further in this section.

Performance management frameworks such as *Towards an excellent service for parks and open spaces*⁵⁶ and the *Culture and sport improvement toolkit*⁵⁷ assess performance of the overall green space service. Green Flag awards can be used as part of these assessments to provide evidence of using quality standards. Such frameworks can be applied differently to suit local circumstances and so data is not necessarily consistent. Moreover, this data is not captured on a national scale and has not been considered in this chapter.

Cleanliness is one of the few aspects of park maintenance that is well documented in national data collection.⁵⁸ Keep Britain Tidy's Local environmental quality survey (LEQSE),⁵⁹ for instance, provides a number of detailed measures of cleanliness, based on objective inspections of spaces. In addition, park users' views about litter are captured in the BVPI survey and GreenSTAT datasets.⁶⁰ Together these data sources offer a reasonably rich account of how well cared for a particular park or public space feels.

In contrast, the availability of data about the management of parks and open space – including how much is spent – is more patchy. There are several reasons for this. The first major problem is that parks and open spaces are accounted for in very different ways in different local authorities and often data relevant to green spaces, including data about the amount spent on them, is bundled up with other information. *The green information gap*⁶¹ reiterates

56 www.cabe.org.uk/public-space/parks/taes

57 <http://cabeurl.com/an> APSE also co-ordinates a local government benchmarking service www.apse.org.uk/performance-network.html

58 *Understanding the links between the quality of public space and the quality of life: A scoping study*, Heriot-Watt University in conjunction with Oxford Brookes University for CABE Space, 2007.

59 <http://cabeurl.com/ao>

60 The English House Condition Survey also includes information on litter provided by an assessor. However, these measures are concerned only with the environment immediately adjacent to the building, for example, the street. This data cannot be associated with a particular park or green space and has therefore been excluded from the study.

61 *The green information gap: mapping the nation's green spaces*, CABE Space, 2009.

the National Audit Office's recommendation for the adoption of a common national framework for collecting data about resourcing green infrastructure.

Local authorities provide some information about their spending on parks and open spaces to CLG and to CIPFA. They are not required to provide information to CIPFA however and as a result this data only covers around 50 per cent of urban local authorities (and as little as 33 per cent for some data).⁶² Data gathered by CLG includes figures for overall expenditure on open space, split into capital spending and revenue spending. These are comparable to the general finance statistics published by CIPFA.⁶³

Overall, the lack of consistency in the way that local authorities record spending on parks makes benchmarking very difficult. Spending data cannot generally be disaggregated to individual parks or neighbourhoods, and there are considerable problems with missing local authority spending returns and inconsistent use of accounting categories. Furthermore, responsibility for green space services is often fragmented across different local authority departments and thus across different budgets.

Spend per person versus spend per hectare

There are two obvious ways to measure the amount that local authorities spend on parks and green spaces: the amount they spend per head of population, and the amount they spend per hectare of space. Apart from the difficulty of finding reliable data for either of these measures, both measures have their deficiencies.

The amount spent per person is difficult for several reasons. The most obvious is that the number of people who happen to live in a local authority area is not necessarily a reflection of the number who use that authority's public space. An extreme example of this problem is the City of London. Very few people (around 8,000 residents⁶⁴) actually live in the City, but during the week 300,000 people work there and use its spaces.⁶⁵ More generally, however, in the case of most local authorities the spend per person can be a useful indicator when comparing the amount spent on the parks service with, say, other services that residents may value less.

The amount spent per hectare is also problematic. Apart from the difficulty of quantifying areas of public green space (discussed in chapter 2), there is also the issue that some types of green space require far more

money to maintain to a reasonable level than others. For instance, a flower garden is far more expensive to maintain than a patch of grass – although it might provide more benefits to its users. Simply knowing an average spend per hectare will not tell you whether or not the spaces that the local authority happens to own have enough spent on them to be well maintained.

Consequently, individually, figures for spend per person, or spend per hectare, should be treated with caution. However, they can be useful components of a suite of indicators and as such are valuable.

The main sources of financial data analysed for the purpose of this report were collected by CLG and CIPFA. Data held by APSE, collected as part of its performance networks,⁶⁶ and CABE data was used for comparative purposes.

Other sources of money for parks

It is worth noting that many local authority-owned parks have benefited from significant external investment, most notably from the Heritage Lottery Fund (HLF). Between 1994 and March 2009, the HLF awarded more than £525 million to 707 parks. HLF money has to be 'match funded' by money from other sources. Some of this will have come from the local authorities themselves, but some of it will have come from central government grants, local businesses, or local fundraising campaigns.

Why London is a special case

There are several reasons why data for London – in particular data about spending and satisfaction – should be treated with caution. First, the revenue support grant given by the government to London local authorities is more generous than it is to the rest of the country.⁶⁷ Second, London benefits from the Royal Parks, and the parks and spaces run by the City of London Corporation, both of which are funded and managed entirely separately from the local authorities. Both organisations manage significant areas of space.⁶⁸

62 CIPFA publishes two sources of information about spending on open space. The Finance and general data has a headline figure similar to that reported in CLG outturn data, and is virtually complete for urban authorities. The CIPFA Leisure, culture and recreation data on the other hand includes more detailed information about spending, including net spending, income and spending per capita, but is much less complete. Statistics based on the years analysed (2007/08).

63 www.cipfastats.net

64 <http://cabeurl.com/ap>

65 <http://cabeurl.com/aq>

66 www.apse.org.uk/performance-network.html

67 <http://cabeurl.com/ar>

A joint CABE, Lantra and GreenSpace survey of local authority skills in 2008 found that the City of London spent more than £2,300 a year per head of population – clearly not something that other local authorities could emulate.⁶⁹

Absence of data about the green space workforce and its skills

In addition to the lack of data about spending on green space, the second major problem in terms of data about park management is the absence of data about the green space workforce. It was the intention of this study to include a core indicator measuring the extent of skills in the green space sector. However, for the reasons highlighted below, this was not possible.

People who work in parks and green spaces have a wide range of backgrounds and skills: there is no single professional or trade body to which they all belong, and no easy way of identifying them. Green space occupations fall within a wide range of job roles and are not adequately described by the current Standard occupational classifications (SOC codes) and Standard industrial classifications (SIC codes) upon which national data collection depends.

CIPFA financial returns include some staff figures. But as with the weakness of spending figures, owing to the different ways that local authorities organise their parks and open space services, it is not clear who is, and is not, included in the published figures.

Some more general datasets, including the Census, the *Labour force survey*⁷⁰ and *Annual business inquiry*,⁷¹ include information about the number of people working in particular occupational classifications that will include people working in the green space sector. Analysis of these data sources did yield some results, but they revealed only the number of employees in public administration who fall under the heading of 'skilled agricultural workers'. Unfortunately, although this category includes horticultural workers, gardeners and groundsmen/women it also includes farmers and those working in agricultural or fishing trades.

Furthermore, this information does not provide any information about the large number of staff employed by private contractors who work in public parks and open spaces. Neither does the data tell us anything about the management-level or professional staff involved in parks and open space services.

The fact that senior parks service managers are statistically 'invisible' is a serious weakness given the importance of strategic planning to the long-term success of our parks and open spaces.

Skills to grow: addressing the shortage of national data

In view of the problems outlined above, CABE Space is co-ordinating the development and implementation of a strategy that sets out what is known about skills shortages across the sector. *Skills to grow* identifies actions to address shortages in the short term and proposals for action that can be taken in the longer term. A large number of organisations are involved in creating and delivering this strategy.⁷²

One element of this was that in 2008 CABE Space, Lantra and GreenSpace undertook a survey of local authority green space managing departments highlighting the main skills issues facing the green space sector (although this covers only 23 urban local authorities).

In addition, in 2009 CABE Space commissioned research into the green space workforce in England. This provides for the first time national data on the total size and scope of the sector operating in publicly accessible green spaces.

The results of both surveys are available to download.⁷³

68 The Royal Parks is an executive agency of government, with an annual budget of over £20 million in 2008/09, that manages over 2,000 hectares of historic parkland across London. While most of the Royal Parks are in central London, three – Greenwich, Richmond and Bushy parks – are in the suburbs. The City of London Corporation owns and manages over 4,000 hectares of parks and public spaces. Uniquely, the City of London Corporation has an independent source of funding derived from property and trusts accumulated over 800 years. It is this money that is used to fund the green space managed by the Corporation.

69 www.cabe.org.uk/publications/local-authority-green-space-skills-survey

70 LFS data held by HWU is only available for Government Office Regions and metropolitan or non-metropolitan authority groupings. It cannot be reported at local authority level.

71 www.statistics.gov.uk/abi

72 www.cabe.org.uk/publications/local-authority-green-space-skills-survey

73 www.cabe.org.uk/publications/green-space-skills-2009 and www.cabe.org.uk/publications/local-authority-green-space-skills-survey

The management and maintenance indicators

- MM1** Resident satisfaction with local authority parks and open space service
- MM2** Annual spend on parks per head of population
- MM3** Cleanliness and maintenance of green space
- MM4** Status of green/open space strategies

The study analysed four indicators that relate to the management and maintenance of green space. Indicator MM1, resident satisfaction with their authority's open space service, based on data from the 2009 *Place survey*, and 2006 BVPI survey; MM2 annual spend based on financial data from CIPFA Finance and general statistics from 2007/08;⁷⁴ MM3 the cleanliness and maintenance of spaces based on data from Keep Britain Tidy's LEQSE survey 2008; and MM4 status of green/open space strategies based on CABE Space data.

Management and maintenance: what the data tells us

Satisfaction with the parks service

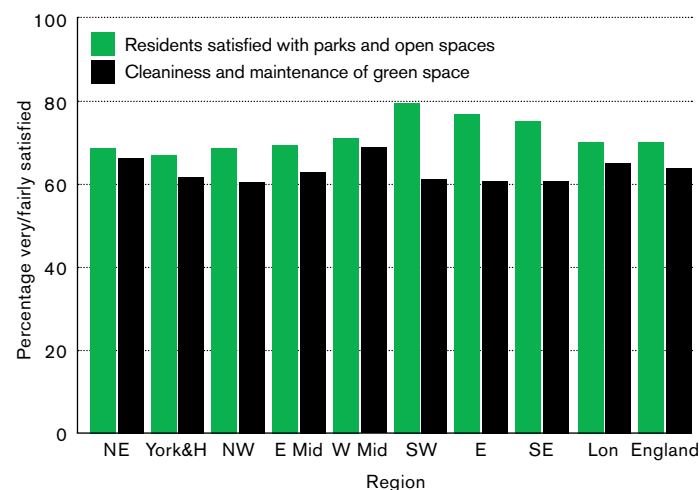
The 2009 *Place survey* found that general satisfaction with parks and open spaces in urban areas is 69 per cent, compared with 70 per cent based on 2006 BVPI data. Assuming the change is not to do with the way in which the two sets of data were collected, this shows a small drop in satisfaction.

It is, perhaps, unsurprising that management and maintenance have a clear correlation with quality. Using BVPI data, which is available in more detail than the *Place survey* and so can be analysed to a greater depth, satisfaction with the parks and open space service seems to show similar patterns to those reported for quality earlier which overall demonstrated quite strong north-south and urban-suburban patterns. Resident satisfaction with their parks and open space service was higher in the south, particularly in the South West, and lower in the north, particularly Yorkshire and the Humber (figure 6).

The indicator MM3, cleanliness and maintenance of green space, shows rather different patterns. Instead, scores were better in the North East and West Midlands and poorer in the East Midlands, South West and South East (figure 6).

⁷⁴ CIPFA data (Finance and general statistics) was used here in preference to CLG outturn data simply because it was more up to date. There is little to choose between these two data sources as they report similar headline figures and offer complete or virtually complete coverage of urban authorities. The more detailed CIPFA data in the Leisure, culture and recreation reports is more refined but less complete.

Figure 6: Satisfaction with parks service and cleanliness by region

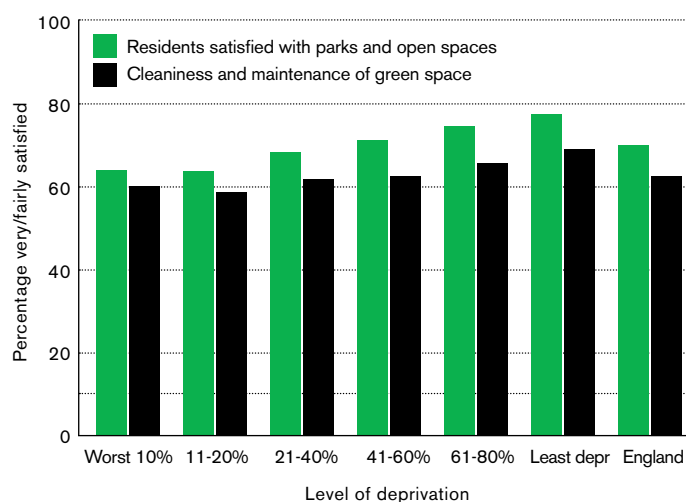


Source: BVPI survey for urban authorities with location codes linked to ward data compiled for *Transforming places* study (Bramley et al 2007).

Management and maintenance in deprived areas

As with the quality indicators, satisfaction with parks and open spaces was lower in deprived areas. This time, the result is also similar for the cleanliness indicator MM3 (figure 7). However, the difference between deprived and affluent areas is less, at 6 percentage points rather than 13 percentage points. Areas with more social renting and areas with a high black and minority ethnic population (more than 40 per cent of ward population) also show lower scores on both indicators.

Figure 7: Satisfaction with parks service and cleanliness by area deprivation



Source: BVPI survey for urban authorities with location codes linked to ward data compiled for *Transforming places* study (Bramley et al 2007).

Modelling satisfaction with parks service

Statistical techniques (regression analysis and logistic regression analysis) were used to account for some of the variation in satisfaction with parks.⁷⁵ The models did not provide a close fit to the data, but because there were a large number of observations we could still identify systematic associations that are statistically significant and plausible.

Satisfaction with the parks service, and proximity to parks, were positively related to satisfaction with open spaces, after controlling for demographics and other factors. In places where local authorities spend more on parks and open space, satisfaction is higher. People who think that parks and open spaces are valuable tend to be more satisfied with the service.

Satisfaction with the service is lower in denser residential areas, and is higher in neighbourhoods with more garden space.

Higher satisfaction is associated with older residents and, marginally, with owner occupiers. Lower satisfaction is associated with working residents, students and disabled people. Higher satisfaction is associated with gross inward migration, single person households and higher occupational mix. Lower satisfaction is associated with the proportion of black and minority ethnic households and those without a car.

Satisfaction with sports provision

We can look at satisfaction with local authority sport and recreation services in a similar way using data from Sport England's *Active people survey*. There is a relationship with deprivation, not dissimilar to that found with parks. In the most deprived neighbourhoods only just over 50 per cent are satisfied with sports provision, and 20 per cent are dissatisfied. This compares with 65 per cent and 10 per cent in the least deprived areas.

Cleanliness

The indicator for cleanliness, MM3, is based on the findings of Keep Britain Tidy's Local environmental quality surveys of England (LEQSE) for 2008.⁷⁶

This is an objective measure of litter and detritus. Another potential source of information is the data from the BVPI, which is a subjective measure of what people think about the cleanliness of their locality. This was used to cross-reference the LEQSE data.

LEQSE data was provided for a sample of 40 urban authorities. In each authority a small number of public open spaces are selected and a number of observations are made by inspectors who grade different parts of each space against a number of criteria: litter, leaves, fly-posting, fly-tipping and graffiti. Each is graded on a scale from 1 (worst) to 7 (best). In total the analysis provides about 1,000 observation points.

In general, the most striking feature of analysis here is the low degree of variation in the grading, which are all towards the higher end of the range, between 5 and 7. There is relatively little systematic variation in some of the indicators, but it appears that the litter grade provides a reasonable picture of variations in quality. This is probably more meaningful than the average grade across the five indicators.

For both litter and the overall index, higher scores are shown for Central London, southern city centres and southern town fringe locations. Lower scores are shown for the Midlands and northern city centres and other northern urban locations, and inner and outer London.

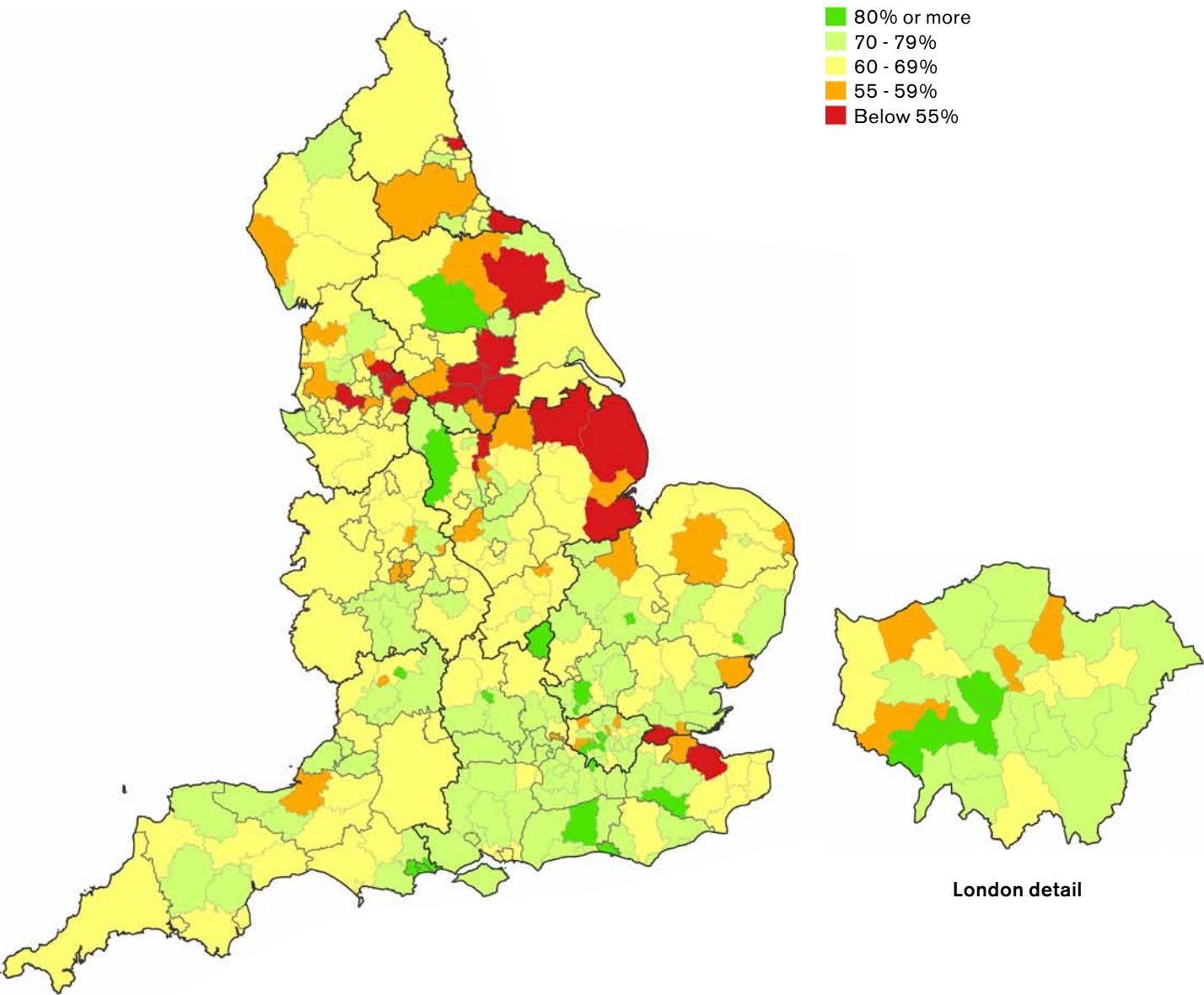
There is a systematic relationship with deprivation, particularly on the litter grade, which falls from 5.74 in the least deprived to 4.94 in the most deprived locations. This link, between deprived areas and less clean public spaces, is supported by findings in research commissioned by the Joseph Rowntree Foundation, which showed that more affluent areas tend to have cleaner streets than deprived areas.⁷⁷ The research found that the two biggest factors in areas with environmental problems were the presence of low-income households, and higher-density housing (irrespective of income).

⁷⁵ For the regression analysis, MM1 used was calculated as a 'net satisfaction score' (proportion of satisfied – proportion of dissatisfied).

⁷⁶ www.keepbritaintidy.org

⁷⁷ Street cleanliness in deprived and better-off neighbourhoods, see <http://cabeurl.com/as>

Map 3: Percentage of residents very or fairly satisfied with parks and open spaces, England and London detail (2009)



Source: *Place survey* (2009).

How much is spent on urban green space?

Using data from CIPFA to calculate spending on green space per head of population suggests that local authority spending is relatively high in the North East and to a lesser extent the East Midlands. Spending per head is relatively low in the South West and London. CIPFA data suggests that the average spend per person is around £17 a year. The equivalent indicator that is measured by APSE (performance indicator 17) suggests an average spend of £23 per person per year.⁷⁸

Although spending per hectare was not chosen to be a core indicator for this report, it was also analysed.⁷⁹ This only agrees with the 'per head' pattern to a limited extent – it suggests that spending per hectare is high in the North West and London, and low in the East Midlands, the South West, and the East of England. The three southern regions appear as lower spenders, relative to their amounts of open space. London, however, appears much higher on this index. Results here are probably distorted by the factors discussed above.

Data about spending is also available from CABE's *Local authority green space skills survey* (2008) which provides figures for 23 urban authorities. This reveals per head spending of between almost nothing (less than £1 per person a year) and £30 per person a year on parks, with average spending among the 23 authorities at £15 per person a year. This is comparable to the average spend suggested by the CIPFA data.

APSE also provides a cost indicator (performance indicator 2) based on the cost of service per hectare of maintained land. The results among the 58 authorities participating in their data collection reveal costs between £1,859 and £11,935, with an average score of £5,545 per hectare.

Green/open space strategies

A strategic approach to green and open space maximises its potential to provide positive social, economic and environmental value to our towns and cities.⁸⁰ Indicator MM4 tracked the status of local authority green/open space strategies, providing a measure of their commitment to green space. The data used here was collected by CABE Space, and covers all the urban authorities in England.⁸¹

Overall, 99 per cent of urban authorities either have a green/open strategy in place, or are in the process of preparing a strategy. This is a significant step forward: in 2000 only 53 per cent had a strategy or were preparing one; in 2005 it was 87 per cent and in 2007 it was 94 per cent.⁸²

Data from early 2010 shows that 62 per cent of urban local authorities in England had in place a completed green/open space strategy. Just under half (41 per cent) of these strategies follow Planning Policy Guidance 17.

This compares favourably with 2007 when 48 per cent had completed a green/open space strategy.

⁷⁸ Care must be taken when comparing these average figures, as the number and type of authorities in each sample is quite different. APSE figures reported here include returns from rural and non-English authorities.

⁷⁹ Using the 'broad' measure of green space taken from GLUD.

⁸⁰ *Open space strategies: best practice guidance*, CABE Space and Mayor of London, 2009.

⁸¹ With the exception of data from 2000 which was collected by the National Audit Office.

⁸² <http://cabeurl.com/bd>

7 How people value urban green space

There are many different ways of considering and calculating the value of green spaces. For instance, expressing the social, environmental and health benefits that they bring to society as a financial value is something that has attracted an increasing amount of interest from researchers.⁸³ However, in this chapter we are concerned instead with the value that different sorts of people assign to parks and green spaces. How important are they to people? Do people from different backgrounds, or living in different areas, think that they are more or less valuable than people in other situations? What are the implications of this for those who plan, manage or make policy decisions about parks and green spaces?

Value: about the data

The amount that people value green spaces was one of the most elusive elements to capture in this project. It is hard to find in existing data sources, although it is arguably very important. Assessing value is more than understanding whether and how people use parks and open spaces; it is about understanding what those spaces mean to people. In order to capture this, we looked for direct measures of green space and its value to people, rather than constructing value measures based on information about the cost savings attributed to park functions such as reducing air pollution or enhancing the health of visitors.⁸⁴

The 2009 *Place survey* and 2006 BVPI survey include two variables that appear to provide some measure of the value green space has for people. These record the number of residents who think that nature is important in making somewhere a good place to live; and the number who think that parks and open space are important.

In addition, DEFRA's *Public attitudes and behaviours towards the environment tracker survey* asks people whether having parks and open spaces near to where they live is important to them. This is one of the UK's sustainable development indicators. This data is very useful, but cannot be disaggregated into small areas, and so cannot be cross-referenced for further analysis with the data from the *Place survey* or BVPI.

People's willingness to give their time is, perhaps, one of the most telling measures of public value and so this is considered here too.

⁸³ For instance the Trust for Public Land in America has calculated that the financial benefits that parks in the city of Philadelphia alone contribute to their users as \$1 billion. Research commissioned by Natural Economy Northwest calculates that the North West's environment adds an estimated £2.6 billion in gross value. <http://cabeurl.com/at> and www.natureconomynorthwest.co.uk

⁸⁴ This is a different type of 'value', based on economic benefits, and used in the Philadelphia Park value work <http://cabeurl.com/at>

The value indicators

- V1** Percentage of people who think that local parks and open spaces are important in making somewhere a good place to live
- V2** Percentage of people who think access to nature near to where they live is important

Data from BVPI 2006 was used to calculate both indicators (figure 8).

Value: what the data tells us

People appreciate local green spaces, and this appreciation is increasing. In 2007, 91 per cent of people thought it was very or fairly important to have green spaces near to where they live, and by 2009 this had risen to 95 per cent.⁸⁵

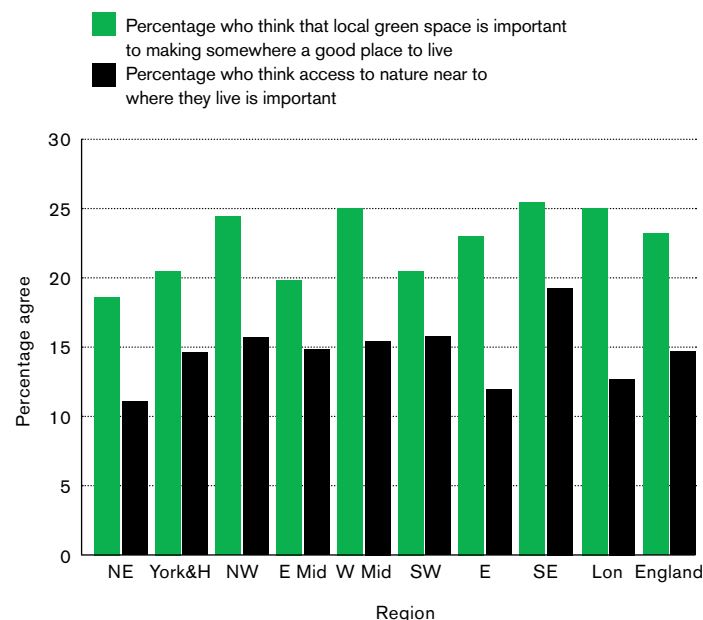
BVPI asked people whether different things are important in making somewhere a good place to live. This sort of indicator is more about the values that individual people hold dear, rather than about the current state or performance of England's urban green space. Item 1 is 'access to nature'; item 14 is 'parks and open spaces'. The responses to the two questions are not the same, and although they can be combined to create an overall picture, this somewhat blunts some of the messages.

These indicators tell a story about how different elements of green infrastructure – parks and other natural green areas – are valued, both by different types of people and by people living in different kinds of areas. Taken in conjunction with the evidence put forward earlier in this report on use, this provides a picture of the need for green space in different urban settings.

In regard to whether local parks and open spaces are considered as important - the data records higher scores in London and the North West, which are the two most highly urbanised regions in England. They are also important to people in the West Midlands and South East, but are recorded as less so in the North East, East Midlands and South West, the latter two being more rural regions (figure 8).

This is consistent with the relationship found between the value of parks and nature, and density of housing. In places with fewer than 20 dwellings per hectare 23 per cent thought parks were

Figure 8: How people value nature and parks across the regions



Source: BVPI survey for urban authorities with location codes linked to ward data compiled for *Transforming Places* study (Bramley et al 2007).

important. This rose to 30 per cent in places with more than 70 dwellings per hectare. Some similarity can thus be seen with the pattern and comments in relation to green space use and urban form.

Communities value green spaces differently

The age group that reports the highest value is people aged between 25 and 44 years old, with just over 30 per cent saying that parks are important. This, perhaps, reflects the age at which people have children and are likely to make a greater use of this service.

Overall, areas that have a population of between 11 and 20 per cent black and minority ethnic residents reported highest value in reference to indicator V1. In areas with more than 40 per cent of their population from black or minority ethnic groups and in areas that have almost no black and minority ethnic residents (less than 2 per cent of population) parks were reported as valued the least. The data records higher reported value by white people than black or minority ethnic people with Black African and African-Caribbean people recording the lowest level of reported value.

⁸⁵ Data taken from *Survey of public attitudes and behaviours to the environment survey, 2007 and 2009* <http://cabeurl.com/av>

These findings should not be taken at face value and interpreting these results is not straight-forward. This study did not look in more detail at the factors that will impact on answers that people will give, for instance level of income and perceptions of safety, or the quantity and quality of green space available. The second part of this research explores this issue in more detail and looks specifically at value and the use of green spaces and its relationship to ethnicity.

Results for indicator V2, access to nature, show an inverse relationship with density. It is reported as valued more in the suburban districts and at the town fringe, and less in city centres. Whereas valuing parks could be indicative of a need relating to compensating for the environmental conditions of urban living, the pattern for valuing nature is more suggestive of a selection effect, whereby people who value access to nature try to live where they can gain such access more easily. Experience may reinforce values: living closer to nature may foster a greater appreciation of it.

However, when we consider deprivation, deprived area residents are less likely to value access to nature (only 10 per cent think it is important), compared with residents of affluent neighbourhoods (20 per cent think it is important). The 'slope' of this relationship appears to be steeper in relation to valuing nature.

It seems likely that the differences between valuing parks and valuing nature may be significant. Perhaps

valuing parks might be characterised as reflecting a basic need for green space associated with urban living, particularly for some demographic groups. Whereas valuing nature in and of itself could be seen as capturing a 'higher order' need, in the sense that Maslow suggested in his hierarchy of needs whereby once other more basic physiological needs are satisfied, individuals are able to focus on other needs.⁸⁶ This would fit in with a common view that green environmental values are something of a middle-class preoccupation, insofar as they represent values that come to the fore when more basic needs have been met. This area of research, like proximity, will benefit from further analysis.

Volunteering as an indication of value

Another measure of the value of green space is captured in figures that show the number of volunteer days contributed to local parks and green spaces.

In CABI's 2008 *Local authority green space skills survey*, the number of days volunteers worked in green spaces in each local authority area ranged from 0 to 1,650, with an average of 443 days. Assuming that this is a fairly representative cross-section of urban authorities in England, this data suggests that volunteers may be contributing more than 62,000 days of work (or 290 work years) to local green spaces every year in urban areas alone. In financial terms this is worth at least £3.4 million per year to urban England, and in the region of £22,000 to each authority.⁸⁷

⁸⁶ <http://cabeurl.com/aw>

⁸⁷ Based on minimum wage levels.

8 Conclusions and next steps

For too long, policymakers and decision makers, and those working in the green space sector, have found their work restricted by the gap in the national information about England's urban green spaces. This research set out to gather together all sources of existing information about England's urban green spaces, to draw the most complete picture possible of their state. All of the data sources analysed for this study had shortcomings. Other areas of data collection continue to be overlooked, for instance spending on green space.⁸⁸ Despite serious shortages of sound, longitudinal data on key themes, it was possible to use the available information to draw statistically robust conclusions about the quality and quantity of our urban green space – and who benefits from it most, and least.

The previous chapters presented our findings according to the key themes identified at the outset of this project: quantity, quality, use, proximity, management and maintenance, and value. In addition these findings were cross-referenced with socio-economic data such as levels of deprivation and ethnicity.

The quantity of urban green space varies considerably between the government regions and types of urban location. The South West, South East and East Midlands tend to have higher levels of green space provision, compared with London, the North West and the West Midlands. Suburban and town fringe areas tend to have more public open space and green space than city centres, although city centres tend to have more recreation facilities and play areas. Furthermore, quality indicators are generally more favourable in the southern regions compared with the northern regions, and generally better in suburban than in urban/city areas, except for central London.

Region-by-region data analysis reveals some interesting variations in quality and quantity, but the most dramatic differences in provision were shown when analysed against deprivation and affluence. Overall, the data reveals how much green space provision differs according to people's socio-economic and cultural background.

These findings have important implications for policymakers, those providing and managing public services, and the many organisations concerned with making a place succeed.

Understanding the nature of places leads to more informed policy development and service delivery at all levels. The mechanisms to create and solve problems are almost always geographically structured.⁸⁹

Public resources need to be targetted to best possible effect, and collecting and managing baseline data about urban green spaces helps to maintain a strategic view, co-ordinate provision, measure the effects of investment or policy initiatives, and respond to changing circumstances. The data can support more equitable access to public services, regardless, for instance, of income or ethnicity.

A baseline of data will enable change to be tracked over time and enable planning for a changing climate. Accurate data about quantity, quality and use of green spaces will help connect provision to need.

⁸⁸ *The green information gap: mapping the nation's green spaces*, CABE Space, 2009.

⁸⁹ *Place matters: the location strategy for the United Kingdom*, Communities and Local Government, 2008.

The following sections draw out the key points from each of the six themes analysed for this project and bring together the findings about how green space provision differs according to people's socio-economic and cultural background.

The chapter concludes with thoughts on next steps for research.

1. Almost nine out of 10 people use parks and green spaces, and they value them. The 2009 *Place survey* found that in urban areas, 87 per cent of the population have used their local park or open space in the last year, and 79 per cent have used it in the last six months. The *Place survey* shows that parks and open spaces are the most frequently used service of all the public services tracked. This compares with 32 per cent that had visited concert halls, and 26 per cent who had visited galleries. In fact, Heritage Lottery Fund research reports 1.8 billion visits to parks in England every year.⁹⁰

Furthermore, people appreciate these spaces and this appreciation is increasing: in 2007, 91 per cent of people thought it was very or fairly important to have green spaces near to where they live, and by 2009 this had risen to 95 per cent.⁹¹

2. If people are satisfied with local parks, they tend to be satisfied with their council. There is a strong link between people's satisfaction with their local parks and open spaces, and their satisfaction with their neighbourhood. Satisfaction with neighbourhood is one of the key things that affects people's perceptions of their council's performance.⁹² This is particularly acute in the most deprived areas, where neighbourhood satisfaction is at its lowest.

This tallies with international research based on telephone interviews with over 28,000 people in the US that found the quality of the built environment, including green spaces, to be among the very important factors contributing to community satisfaction.⁹³

Putting in place an open space strategy is potentially one ingredient of success. Of the authorities that have shown the biggest improvement in residents' satisfaction in the last four years, nearly three quarters have completed their open space strategy. Furthermore, statistical modelling of green space service satisfaction data shows that it is positively related to the quantity and the proximity of parks and recreation areas, and to service spending.

90 *HLF funding for public parks 1st April 1994 – 31st March 2009*, Heritage Lottery Fund Policy and strategic development department data briefing, October 2009.

91 *Survey of public attitudes and behaviours to the environment survey, 2007 and 2009* <http://cabeurl.com/ax>

92 <http://cabeurl.com/b9>

93 *Beautiful places: the role of perceived aesthetic beauty in community satisfaction*, Working paper series: Martin Prosperity Research. Paper prepared by Richard Florida et al., March 2009.

3. The provision of parks in deprived areas is worse than in affluent areas. People in deprived areas, wherever they live, receive a far worse provision of parks and green spaces than their affluent neighbours. They often do not have gardens and so access to good-quality public green space matters even more. The most affluent 20 per cent of wards have five times the amount of parks or general green space (excluding gardens) per person than the most deprived 10 per cent of wards.

So if you live in an affluent suburb, you are also likely to have an above-average quantity of good parks nearby. On the other hand, if you live in a deprived inner-city ward, with high-density housing, you might have many small, poor-quality green spaces but you are unlikely to have access to large green spaces, or good-quality green space. Comparing deprived and affluent areas, residents' general satisfaction with their neighbourhood falls from around 80 per cent in affluent places to around 50 per cent in the most deprived places.

The wards with high overall proportions of social renting tended to score the lowest on the majority of measures relating to the quality of green spaces. It was not possible to explore this in a finer level of detail owing to the absence of information about social housing green space in national data collection. This is an important information gap.

People who are not working because of unemployment or sickness – an individual marker of deprivation – tend to be found in areas with lower quantity and quality of green space. The impacts are cumulative. The study found that limiting longer-term illness or disability is associated with lower satisfaction with neighbourhood, lower quality of parks service, lower parks use and much lower physical activity.

4. People from minority ethnic groups tend to have less green space and it is of a poorer quality. Areas with very few black and minority ethnic residents tend to have more green space, and it is of a good quality. We recognise that this is intimately related to the circularity of disadvantage – nearly all minority ethnic groups are less likely to be in paid employment than white British men and women and are more likely to be living in areas of deprivation.⁹⁴

Wards that have almost no black and minority ethnic residents (less than 2 per cent of ward population)

have six times as many parks as wards where more than 40 per cent of the population are people from black and minority ethnic groups. They have 11 times more public green space, if one looks at all types⁹⁵ and not just parks.

The differences are most marked on the indicator of general satisfaction with neighbourhood, when analysed by ethnicity (rather than affluence). Only half of residents in wards with more than 40 per cent of their populations from black or minority ethnic groups are satisfied, compared with 70 per cent in wards with less than 2 per cent.

Across the study, patterns of ethnic mix were interesting. Areas with intermediate proportions of black and minority ethnic residents (between 11 and 40 per cent) recorded the highest levels of use of parks and open spaces. In addition, in wards with between 11 and 20 per cent of the population from black or minority ethnic groups the story is more positive in regard to levels of satisfaction, with 70 per cent of the population being satisfied with green space provision.

5. The higher the quality of the green space, the more likely it is to be used. Regardless of your economic circumstances, access to green space is beneficial to your health.⁹⁶ If an area has high-quality parks, it is likely that more residents will use them more often. Parks in the most deprived 10 per cent of wards have an average of 51 visits per year, compared with 62 in the most affluent wards.

This pattern is supported by research which found that parks restored with money from the Heritage Lottery Fund have seen average visitor numbers rise by 68 per cent.

People's level of physical activity is related to affluence, or lack of it. In the most deprived wards, where quality of green space provision is lower, only 40 per cent of adults engage in moderate physical activity, compared with nearly 60 per cent in the most affluent wards.

⁹⁴ *An anatomy of economic inequality in the UK – summary*, Report of the National Equality Panel, Government Equalities Office, 2010.

⁹⁵ Gardens not included.

⁹⁶ Mitchell, R and Popham, F, 'Effect of exposure to natural environment on health inequalities: an observational population study', *The Lancet* 372 (9650): 1655-60, 2008.

It is important to provide green spaces that are appropriate for people of different ages. Young people aged between 16 and 24 report lower quality across all indicators analysed for the study: 15 per cent thought their local parks and open spaces were the aspect of their areas that needed most improvement, compared with 8 per cent of 55-74 year olds.

Overall, the strong correlations between poor quality and quantity of spaces in deprived areas, and the low levels of physical activity of residents, strongly suggest that investing in the quality of parks and green spaces is an important way to tackle inequalities in health and well-being. The second part of the research explores this in more detail.

The relationship between quality and use is not as clear-cut as other indicators analysed. The urban form – the level of density of housing – does impact on use of parks. Those areas that are denser, with few gardens and a higher number of flats, tend to have higher levels of use. As expected, use of parks and formal green space is higher in the areas where residents have access to less private green space. In addition, people living in denser areas and city centres reported higher scores in terms of valuing their parks and open spaces. This is also reflected in the regional patterns which tend to show higher scores on this 'value' indicator in more urbanised regions.

Next steps

Proving the economic, social and environmental value of urban green space is not straightforward. In addition to the shortage of robust national data, analysis is complicated by the fact that green space value consists of elements that are not easily measured owing to the difficulty of controlling for interfering variables. Green spaces are by their nature multifunctional and analysis falls between different academic areas. To date, cross-disciplinary investigation into the many values presented by urban green space has been limited.

This study shows where there is plenty of information, for instance data relating to cleanliness, and where there are serious gaps, for instance data on spend and green space skills. It clarifies the strengths and weaknesses of existing data. It will help to inform accurate data collection, locally and nationally, and suggests where more work would be beneficial.

There is great scope for future work:

Exploring the economic benefits

Public spaces are the one public service that everybody uses on a daily basis, that are free and available to all and that impact on everybody's well-being. However, proving the direct impact of investment on well-being is complicated by the need to take into account long timescales: benefits accrue over many years. Those who make the investment and those who benefit are not always directly connected, making a policy case complicated to present.

City park economics is an emerging discipline and more research into the economic value contributed by green spaces to towns and cities is needed.⁹⁷ The financial benefits high-quality parks and green spaces contribute to cities have been examined in research by the Trust for Public Land in America. Its study enumerates the economic value of the City of Philadelphia's park system for clean air, clean water, tourism, health, property value and community cohesion.⁹⁸

Research commissioned by Natural Economy Northwest, a joint programme of the Northwest Regional Development Agency and Natural England, brings together a wide range of evidence on the multiple benefits of green infrastructure, focusing in particular on its role in creating economic prosperity and stability for the region. The research calculates that the Northwest's environment generates an estimated £2.6 billion in gross value added and supports 109,000 jobs in environment and related fields.⁹⁹

Exploring the environmental benefits

Proving the environmental benefits of urban green space is an emergent science, and to date most focus has been on rural areas in England. The value of green infrastructure (the networks of parks, gardens, allotments, trees, green roofs, cemeteries, woodlands, grasslands, moors and wetland areas) for towns and cities requires further analysis.

⁹⁷ <http://cabeurl.com/az>

⁹⁸ *How much value does the city of Philadelphia receive from its parks and recreation system?*, Trust for Public Land, 2008.

⁹⁹ <http://cabeurl.com/ay>

This analysis should consider issues at a wider scale than has been employed to date. For instance, the environmental value of green infrastructure for the management of floodwater is wider than the quantity of water that is stored, and is also about the operation of green networks across different spatial scales.

Exploring the social benefits

There is great scope for further research on the social benefits of urban green space. The relationship between access and use of green space and positive health outcomes is explanatory, not causal. In particular, more work is needed on children's use and access to green space. Children have less contact with nature now than at any time in the past and it is estimated that by 2020 half of all children could be obese.¹⁰⁰

There is also an absence of research into the quality and type of urban green space provision experienced by social tenants and how this impacts on their well-being. The green space owned and managed by social landlords is not mapped, although a pilot project by Natural England is developing a methodology to do this.

Finally, there is a lack of in-depth investigation into deprivation, ethnicity and the quality and types of access to urban green space. Evidence of income and race inequalities in access to urban green space in the UK is limited to a handful of studies and most of the research on ethnicity and landscape has focused on rural contexts.¹⁰¹

However, access to nature is mostly occurring in the local, urban neighbourhood context as historically black and minority ethnic populations are concentrated in inner cities and urban areas. There is also a lack of quantitative research using larger samples of black and minority ethnic groups in relation to health and physical behaviour and attitudes to green space. Research on the way in which urban green space facilitates social integration and community cohesion is limited.

The second part of research carried out for CABE by OPENspace Research Centre, Edinburgh College of Art, in collaboration with Heriot-Watt University, uses data in this report as a baseline. It examines in more depth the impact of the quality of green spaces on the well-being of people living in six deprived urban areas. It focuses on black and minority ethnic communities within these areas and the relationship between perceptions of quality of urban green space and its use – an area of research that has to date received little attention.

¹⁰⁰ Strategy Unit, *Food matters: a strategy for the 21st century*, London: Cabinet Office, 2008.

¹⁰¹ For example Neal, S and Agyeman, J, *The new countryside?*, 2006.

Appendix 1:

Review of sources of data about green space in England

Data source	Data owner	Comment
<i>Active people survey</i>	Sport England	Large-scale survey of people's leisure and physical activity in England (around 1,000 per authority). Collected annually from 2005 to 2010.
Allotment sites 2004/05	Communities and Local Government	GIS based data including boundaries.
<i>Annual business inquiry</i>	Office for National Statistics	Annual survey of businesses collecting information about employment, enterprise, expenditure and stock. Does not appear to offer information about people working in the green space sector. Not used for this study.
APSE performance indicators	Association of Public Service Excellence	APSE manages a benchmarking club that allows authorities to benchmark their practices against other UK authorities. There is a large suite of performance indicators which APSE maintains, including several on public open space and playgrounds, although the number of subscribers to each indicator varies. It was not possible to access non-aggregated data. As a result, APSE performance indicators are used in this project as benchmark figures only.
Areas of outstanding natural beauty	Natural England	Available via Natural England.
Athletics tracks	Sport England	Covers both grass and synthetic tracks. Available via <i>Active places</i> power gateway. Point data with linked information about size allowing notional boundary to be drawn (circular).
Big Bird Watch	RSPB	Captures observations of bird life in domestic gardens across the UK. Several million entries. Could be used to construct some urban biodiversity measures, but not strictly linked to green space. Not used for this study.
Burial grounds 2006	DCA	Point data with linked information about size allowing notional boundary to be drawn (circular).
BVPI/ <i>Place survey</i>	CLG/Audit Commission	Regular survey of residents collecting information about satisfaction with neighbourhood quality and local authority services. Includes a number of measures relevant to green space, including views about nature, park use frequency and satisfaction with parks service. <i>Place survey</i> now includes self-reported health status. Unfortunately not all of the most recent data (<i>Place survey</i> 2009) was available for this study so it relies on BVPI data from 2006 where necessary.
Census 2001	Office for National Statistics	Used for a variety of measures including public sector employment in agricultural grades and contextual socio-economic indicators.
CIPFA Finance and general; leisure, culture and recreation	Chartered Institute of Public Finance and Accountancy	Local authority spending data collated annually. The finance and general data includes almost all urban authorities. The culture, sport and recreation data offers a lot more detail about spending on public open space, but covers only about 50 per cent of English urban authorities.

CLG outturn data	CLG	Information about local authority spending; includes headline figure for open space (gross of income) and covers all English authorities. Worksheet does not allow comparison between authorities, making analysis time-consuming. Not used in the context of this project (CIPFA Finance and general statistics used instead).
Community Forests	Forestry Commission	Available via MAGIC.
Community gardens and city farms 2004/05	CLG	Available via CLG. Point data.
Country Parks	Natural England	Available via MAGIC. GIS based data including boundaries.
Doorstep greens	Natural England	Available via MAGIC. GIS based data including boundaries.
<i>English house condition</i> survey	CLG	Continuous survey from 2002 to 2008 collecting information about the condition and energy efficiency of English housing. Now merged into <i>English housing</i> survey. Based on assessor scores, and includes information about the condition of the street/environment adjacent to the building (eg litter). However, data cannot be linked to green space and was not included in this project.
Environmental quality index (EQI)	Environment Agency	A mapping tool created for the Environment Agency that calculates comparative environmental quality scores for English local authorities based on 12 underlying environmental factors, including air and water quality, green space (GLUD), derelict land and IMD.
Fields in Trust Playing Fields	Fields in Trust	Database of playing fields in which FIT has an interest. Postcodes or addresses not always included.
GLUD (Generalised Land Use Database)	CLG	Provides comprehensive information about land use cover in England. Includes two categories relating to green space: domestic gardens and green space. The green space category in GLUD covers anything green from farmland to parks to forest.
Golf courses	Sport England	Available via <i>Active places power</i> gateway. Point data with linked information about size allowing notional boundary to be drawn (circular).
Grass pitches	Sport England	Available via <i>Active places power</i> gateway. Covers sports pitches and details the total number of pitches on each site. Point data with linked information about size allowing notional boundary to be drawn (circular).
Green belt	CLG	Available via MAGIC. GIS based data including boundaries.
Green Flag parks 1997-2009	Keep Britain Tidy, GreenSpace and BTCV	Annual count of Green Flag awards by authority. Point data in all cases except 2005/06 for which GIS based boundary data is available.
Green Heritage Site winners 2004/05	Keep Britain Tidy, GreenSpace and BTCV	Point data.
Green Pennant parks 2004/05 and 2005/06	Keep Britain Tidy, GreenSpace and BTCV	Point data.

Green/open space strategy data	CABE Space	Regular survey of local authorities updating current situation re: green/open space strategies.
Green space policy designations	Landmark	GIS data illustrating green space and the policy designations which apply to it. Based on information from local authority development frameworks, and could provide a valuable alternative source of data about the area, number and type of green spaces in urban England. This data was not included in this study as there was a cost to use.
GreenSTAT	GreenSpace	Park-by-park survey filled in by users and gathering detailed information about use frequency, duration of visit, benefits, facilities, design and satisfaction.
Heritage Coast	Natural England	Available from MAGIC.
Index of multiple deprivation (2007)	CLG	Used to provide contextual information on levels of deprivation.
<i>Labour force survey</i>	Office for National Statistics	The <i>Labour force survey</i> (LFS) is a quarterly sample survey of households living at private addresses in Great Britain. Its purpose is to provide information on the UK labour market.
<i>LEQSE Local environmental quality survey of England</i>	Keep Britain Tidy	A representative dataset assessing environmental quality in local authority areas. Data based on inspector assessments of land use, litter, graffiti, cleanliness. For the purposes of this study, a sample of data covering 40 urban authorities was provided.
<i>Local authority green space skills survey (2008)</i>	CABE Space, Lantra, GreenSpace	One-off survey of local authorities that gathered data about spending, staffing and skills. Covers only a small proportion of urban authorities in England.
Local nature reserves	Natural England	Available from MAGIC. GIS based data including boundaries.
Millennium greens	Natural England	Available from MAGIC. GIS based data including boundaries.
National nature reserves	Natural England	Available from MAGIC. GIS based data including boundaries.
National Parks	Natural England	Available from MAGIC.
National Trust Land Holdings	National Trust	Comprehensive database of NT land holdings across England and Wales, including GIS boundary data.
<i>Public parks assessment 2001</i>	Audit Commission	Survey of local authorities documenting overall number and area of parks and recreation space, details of parks of national and local historic value, plus information on spending amounts and trends, staffing and management.
<i>Public parks assessment update 2005</i>	National Audit Office/ GreenSpace	Similar to the original survey in 2001, but slightly limited in overall response rate and topics covered.
Ramsar sites	Natural England	Available from MAGIC.
Registered common land	Natural England	Available from MAGIC.
Registered parks and gardens	English Heritage	Available from MAGIC. GIS based data including boundaries.
RSPB reserves	RSPB	Available from MAGIC.
Scheduled monuments	English Heritage	Available from MAGIC.

Special areas of conservation	Natural England	Available from MAGIC.
Special Protection Areas	Natural England	Available from MAGIC.
Sites of special scientific interest	Natural England	Available from MAGIC.
Synthetic pitches	Sport England	Available from <i>Active places</i> power gateway. Not included in the project or the inventory.
<i>Taking part</i> survey	DCMS	Ongoing national survey of various leisure, sports and cultural activities (around 29,000 participants each year). Not analysed fully, but used to benchmark other data.
<i>Transforming places</i> database	Joseph Rowntree Foundation	Includes variables from various sources, eg Census, IMD, GLUD, Nationwide Building Society, planning data and neighbourhood statistics covering the period 1998-2006. Covers all wards in England. Produced by Heriot-Watt University for a Joseph Rowntree study, <i>Housing investment and neighbourhood market change</i> (2007).
Trees in Towns II (2008)	CLG	Survey of trees in the towns and cities of England (updating carried out in 1992/93). Includes information about trees in a sample of 147 towns and cities in rural and urban settings. Underlying data does not include local authority names or codes, and samples a number of land use types including green space.
Village greens	DEFRA	Available from MAGIC. Point data.
Woodland Trust sites	Woodland Trust	Available from MAGIC.
Woods for People	Forestry Commission	Available from Forestry Commission.

Appendix 2:

Review of indicators that capture some element of green space

Non-UK indicators:

CEROI indicators

ECI 104: availability of local public open areas and services as measured by:

Number of inhabitants living within 300m of a public open area that is larger than 5,000m² (%);

Number of inhabitants living within 300m of health services (%);

Number of inhabitants living within 300m of public transport (%);

Number of inhabitants living within 300m of recycling facilities (%);

Number of inhabitants living within 300m of schools (%).

Public access to green spaces, as measured by green spaces with public access (m²/inhabitants).

Quality of urban wildlife: number of bird species.

Green areas: percentage of built-up area.

Investments in green area: maintenance costs per year as a percentage of city product.

Urban Audit indicators

Green space to which the public has access (m² per capita).

Proportion of area covered by green space.

Proportion of area used for sports/leisure.

Land (m²) in recreational sports and leisure use per capita.

New Zealand, sustainable development indicators:

Residents' rating of their sense of pride in the way their city looks and feels.

Residents' perception of their overall quality of life.

Extent and legal protection of indigenous vegetation cover.

New Zealand quality of life indicators

Total hectares of green space per 1,000 population (defined as open space under the management or control of councils).

Residents' rating of ease of access to green space (using a 5 point scale from very easy to very difficult).

Auckland Public Health Service (NZ) health and well-being measure¹⁰²

Geographic access to green activity space, based on proximity (distance to nearest), opportunity (size of nearest) and choice (alternative within distance). Green activity place is defined as public or quasi-public space that provides opportunities for physical activity in a green setting. It does not include farmland and is relevant only to urban areas.

Melbourne environmental indicators (Australia)

Annual number of visitors to Melbourne's parks and gardens (millions of visits);

The main reason for visiting one of Melbourne's major parks;

What visitors enjoyed about Melbourne's parks and gardens.

San Francisco (US) sustainable city indicators:

Percentage of the population with a recreational facility and a natural setting within a 10 minute walk.

Number of neighbourhood green street corridors created annually.

Number of volunteer hours spent annually on maintenance of open space.

Annual municipal expenditure on parks, open space, and streetscapes.

Germany, State of the Environment report:

Number, area and percentage of each state covered by nature reserves.¹⁰³

Netherlands, green space indicators:¹⁰⁴

Availability of green areas in cities — the number of parks, woods or other green areas within 500m.

Birds in cities — a count of 16 species and their prevalence (winter census).

Visits to woods, nature and recreational areas: % of residents visiting constructed recreational areas outside cities, urban parks and forests; and protected nature areas.

UK indicators:

UK sustainable development indicators

Environmental quality: populations living in areas with, in relative terms, the least favourable environmental conditions (2001/06).¹⁰⁵

Local environmental quality: percentage of assessments that are poor/unsatisfactory based on litter, dog fouling, detritus, weeds, fly-tipping, fly-posting, graffiti, physical appearance, condition and maintenance. Uses Keep Britain Tidy data.

Satisfaction in local area: percentage of households satisfied with the quality of the places in which they live (a) overall, (b) in Neighbourhood Renewal Fund areas.

Green space: importance of green space – the number of people who think that is very or fairly important to have green spaces near to where they live.

Frequency of green space use – the proportion of people using green space for six frequency bands.

Audit Commission area profiles

Proportion of developed land that is derelict (based on NLUD data).

Area of land designated as a site of special scientific interest (SSSI) within the local authority area (based on Natural England data).

The percentage area of land designated as a SSSI within the local authority area, which is found to be in favourable condition (based on Natural England data).

Percentage of residents who think that for their local area, over the past three years, parks and open spaces have got better or stayed the same. (Based on CLG BVPI data.)

Natural England accessible natural green space standard (ANGSt)

Every home should be within 300m of an accessible natural green space of at least two hectares.

Each home should also have access to at least one accessible 20 hectare site within 2km; at least one accessible 100 hectare site within 5km; and at least one accessible 500 hectare site within 10km.

Scottish Natural Heritage indicators¹⁰⁶

Urban land covered by local plan designations or policies (green belt, landscape designations, nature conservation designation, semi-natural green space and green networks).

Green space per person (four Scottish cities).

Greenspace Scotland (State of Scotland's Greenspace report)

Status of open space audits and strategies.

Extent of green space by local authority (hectarage, percentage of urban area, per thousand population).

Type of green space by local authority (hectarage, percentage of urban area, per thousand population).

Public attitudes to green space.

Local satisfaction with green space.

Wales Assembly Government sustainable development indicators

Indicator 27a: percentage of people stating that they could access a park or open space easily in the *Living in Wales* survey.

Indicator 27b: additional indicator from rollout of Countryside Council for Wales's (CCW) green space toolkit (to be developed).

Indicator 29a: percentage of total length of footpaths and other rights of way which were easy to use by the public.

Indicator 29b: an indicator of damaging impacts of access (to be developed).

Indicator 29c: change in number and extent of tranquil areas as defined in CCW mapping work (to be developed).

Indicator 29d: additional indicator to be considered following the development of the *Outdoor recreation survey* (to be developed).

¹⁰² <http://cabeurl.com/b0>

¹⁰³ <http://cabeurl.com/b2>

¹⁰⁴ <http://cabeurl.com/b3>

¹⁰⁵ IMD used to determine deprivation; environmental conditions are ambient air pollution, industrial airborne releases, green space, habitat favourable to biodiversity, derelict land, flood risk, river water quality, housing quality. In each of these conditions the population living in the 10 per cent of areas with the least favourable conditions has been determined.

¹⁰⁶ www.snh.org.uk/SNHi

Appendix 3:

In-depth review of 52 indicators

Of these indicators, just under half are UK based, and 17 are drawn from EU member states or European institutions. Although the 52 measures capture a wide range of information about green space, a number of themes are identifiable and are common to the themes chosen to structure this research.

1. Quantity: Indicators that measure quantity are either absolute measures or relative measures. For instance, the Europe-wide Urban Audit¹⁰⁷ records the proportion of an area covered by green space or used for sports and leisure. In some cases relative quantity measures record the area of green space per thousand population or per person, for instance New Zealand's quality of life indicators.¹⁰⁸

2. Proximity: Indicators that conceptualise the amount of green space available rather differently by looking at proximity or physical/geographical accessibility to users. These proximity measures tend to record the number or percentage of inhabitants living within a certain distance of a green space. Indicators used for the Cities Environment Reports on the internet (CEROI),¹⁰⁹ a programme that is part of the United Nations Environment Programme, use proximity to measure physical access to open space and public services. This is also at the heart of Natural England's accessible natural green space standard (ANGSt),¹¹⁰ which expresses the target of every home being within 300 metres of an accessible natural green space of at least two hectares.

3. Quality: Indicators that capture something of the quality of green space, in many cases in terms of biodiversity or conservation status. CEROI indicators, for instance, include a measure of urban wildlife based on number of bird species. In the UK there are several measures expressing both the area of land that is covered by various designations, for instance sites of special scientific interest, and the condition of those sites.¹¹¹

4. Use: Indicators focusing on people's use of green space and their feelings about their neighbourhood green spaces. In Melbourne, Australia, the city's environmental indicators include three measures to do with the number of visitors to Melbourne's parks and gardens, their reasons for visiting and what they enjoyed about their visit.¹¹²

5. Management: A very small number of measures that focus on the management of green space. In CEROI, this is measured as annual maintenance costs as a percentage of city product, while in San Francisco it is simply measured as annual spend on parks, open space and streetscapes.¹¹³

107 www.urbanaudit.org

108 www.bigcities.govt.nz/index.htm

109 www.ceroi.net

110 <http://cabeurl.com/b4>

111 Available from www.magic.gov.uk

112 <http://cabeurl.com/b5>

113 www.sfenvironment.org

Appendix 4:

Suggested indicators/proxies to measure the state of England's urban green space

Suggested indicator/measure	Data Source
Green space (hectares) per thousand population.	GLUD and Census
Percentage of people using green space by frequency (six bands).	BVPI/ <i>Place survey</i>
Total green space per thousand children.	GLUD and Census
Green Flag parks: number per thousand population.	CLG and Census
Percentage of households satisfied with quality of places in which they live.	BVPI/ <i>Place survey</i>
Annual spend on parks per hectare of green space.	CIPFA and GLUD
Percentage of residents who think that local parks and open spaces have got better or stayed the same.	BVPI/ <i>Place survey</i>
Resident satisfaction with local authority parks and open space service.	BVPI/ <i>Place survey</i>
Cleanliness and maintenance of green space.	Keep Britain Tidy
Percentage of local authority covered by green space.	GLUD
Quality of urban wildlife (number of bird species).	RSPB Big bird watch data
Percentage of people who think that access to nature and parks and open spaces are important in making somewhere a good place to live.	BVPI/ <i>Place survey</i>
Number of homes within 300m of a natural green space of at least two hectares.	CABE urban green spaces inventory
Number of green spaces within 500m.	CABE urban green spaces inventory
Measure of accessibility to green space for those in most deprived areas.	Census, IMD and CABE urban green spaces inventory
Annual spend on parks per person.	CIPFA and Census
Reasons for visiting parks and open spaces.	GreenSTAT
Amount of area used for sports/leisure.	Sport England (active places gateway)
Measure of park use: frequency of summer and winter visits.	GreenSTAT
Measure of accessibility to green space for people from minority ethnic groups.	Census and CABE urban green spaces inventory
Measure of accessibility to green space for people aged 65 and over.	Census and CABE urban green spaces inventory
Percentage of people who think that local access to nature and parks and open spaces most need improving.	BVPI/ <i>Place survey</i>
The number of people who think it is very, or fairly, important to have green spaces near to where they live.	BVPI/ <i>Place survey</i>
Measure of user satisfaction with parks.	GreenSTAT
Green space (hectares).	GLUD
Green space density measure (bands/quartiles).	GLUD and Census

Green space diversity measure.	Various
Ratio of green space to domestic gardens.	GLUD
Number/size of allotment sites.	CLG
Community gardens and city farms (number/size).	CLG
Millennium greens and doorstep greens.	CLG
Historic sites, gardens and monuments (number, size).	CLG
Number and area of parks in local authority ownership (2001).	<i>Public parks assessment</i>
Change in area of parks in local authority ownership.	<i>Public parks assessment</i>
Land (m ²) in sports/leisure use per person.	CLG
Number and area of sports pitches/playing fields.	Fields in Trust, Sport England
Number of play areas.	MasterMap
Number of play areas per thousand children.	MasterMap and APSE
Percentage of area of land designated as SSSI which is found to be in favourable condition.	Natural England
Quality of urban wildlife: biodiversity measure.	Environment Agency
Number, area and percentage of local authority covered by nature reserves, SSSIs and other nature designations.	Natural England and CLG
Green Flag parks: number per local authority area.	CLG
Green Flag parks: performance compared to local authority 'average'.	CLG
Green Flag parks: change in number over last x years.	CLG
Regional Green Flag numbers per million population.	CLG
Status of open space audits and strategies.	CABE Space data
Amount of land covered by local plan designations or policies.	Landmark
Status of play strategies	Play England

Appendix 5:

Important data sources – and their limitations

Discontinuous data sets

Best value performance indicator (BVPI) information was one of the most significant sources of data for the study. BVPI surveys of residents were undertaken every two years until 2006, measuring satisfaction with neighbourhood quality and local authority services. The aim was to give government, local authorities and residents a snapshot of how well each local authority was performing; enable comparisons between authorities, and monitor progress over time.¹¹⁴ From 2008 the BVPI survey was replaced by the *Place survey*, which has a similar purpose and is also co-ordinated by the government department Communities and Local Government (CLG).¹¹⁵

Unfortunately, *Place survey* data publicly available at the time of this study (2008/09) was more limited than it was for BVPI. For more in-depth analysis the research therefore relies on data from BVPI 2006 rather than on the more up-to-date *Place survey*.

Lack of small-area detail

Despite the advantages of the BVPI data, analysis was limited by availability of postcode, or ward code, data within the dataset. As a result, there were around 40 urban authorities for which we were unable to calculate or report ward level results.

Another useful source of data was the government's Sustainable Development Indicators.¹¹⁶ These measure progress in the UK towards sustainable development and consist of a suite of 68 national indicators around sustainable consumption and production; climate change and energy; natural resource protection and enhancing the environment; and creating sustainable communities and a fairer world. While these indicators are extremely useful in terms of tracking progress against a wide range of relevant themes, the data cannot be disaggregated into small geographical areas which means it was of limited use in terms of our deeper analyses of urban areas.

Datasets that do not cover all urban areas

Some of the datasets did not provide complete coverage of urban authorities or did not cover all areas in similar depth. For instance, GreenSTAT,¹¹⁷ which tracks park users' views, includes valuable data from most urban authorities but the sample size does vary between areas.

Local authority spending data is collated annually and information on headline spend on parks and

open spaces is fairly comprehensive. However, in-depth financial data is incomplete. Data from the Chartered Institute of Public Finance and Accountancy (CIPFA)¹¹⁸ recording spend on culture, sport and recreation is based on the number of authorities that choose to respond to this survey each year. Thus, this data source had about 40 per cent of urban authorities missing for the year analysed¹¹⁹.

One-off surveys

Some of the key sources used in this research were one-off surveys, for instance the *Public parks assessment*,¹²⁰ and the *Local authority green space skills survey*.¹²¹ We cannot predict whether these will ever be repeated in the same format and so it may prove difficult to track their findings over time.

114 <http://cabearl.com/b7>

115 <http://cabearl.com/b8>

116 <http://cabearl.com/af>

117 GreenSTAT is a rolling dataset; see www.greenstat.org.uk. For the purposes of this project, the GreenSTAT data used here dates from late 2008.

118 www.cipfa.org.uk

119 2007/08

120 *Public parks assessment: a survey of local authority owned parks focusing on parks of historic interest*, Urban Parks Forum, 2001.

121 *Local authority green space skills survey*, CABE Space, Lantra, GreenSpace, 2008.

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No one knows exactly how many green spaces there are in our urban areas, where they are, who owns them or what condition they are in. A CABE Space research project starts to fill this serious information gap, by compiling and analysing data at a national level. This report presents the main findings of the research. It will be of interest to policymakers and decision makers in central and local government and anyone interested in understanding more about England's urban green spaces.

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