



Department for  
Communities and  
Local Government

# Land Use Change Statistics in England: 2015-16

Historically, this release has contained information on both changes in land usage and residential addresses in terms of the location and type of change. However, quality assurance procedures are ongoing regarding the data on changes in land usage. The tables and statistics relating to the areas of land changing use have therefore been omitted from this release. An update will be provided in due course.

In 2015-16:

- The proportion of new residential addresses created, including conversions to residential use, on previously developed land was 61 per cent. This is an increase of three percentage points compared to 2014-15.
- The main previous land use categories on which a residential address was created were:
  - 'Other developed use' at 17 per cent of all addresses created.
  - Residential land at 14 per cent of all addresses created; and.
  - Agricultural land at 13 per cent of all addresses created.
- The average density of residential addresses surrounding a newly created residential address was 32 addresses per hectare. This is an increase on the recorded 31 addresses per hectare in 2014-15.
- Two per cent of new residential addresses created were within the Green Belt. This is a decrease from three per cent in 2014-15.
- Nine per cent of new residential addresses were created within areas of high flood risk. This is an increase on the eight per cent recorded in 2014-15.



## Planning

### *Statistical Release*

30 November 2016

Introduction	2
Changes to residential use	3
Density of new dwellings	7
Changes within the Green Belt	9
Changes within areas of high flood risk	10
Accompanying tables	11
Technical notes	12
Enquiries	16

#### **Responsible Statistician:**

Andrew Presland

#### **Statistical enquiries:**

Office hours:

0303 444 3510

[andrew.presland@communities.gsi.gov.uk](mailto:andrew.presland@communities.gsi.gov.uk)

#### **Media Enquiries:**

0303 444 2183

[newsdesk@communities.gsi.gov.uk](mailto:newsdesk@communities.gsi.gov.uk)

#### **Date of next publication:**

November 2017

# Introduction

Land use change statistics are a rich source of information which show how land use has changed in England. The information includes the nature of the changes, the areas of land affected and the locations of the changes. These changes are recorded to and from a set of 28 land use categories (see Table BN1 in the technical notes). This Statistical Release focuses on changes to a developed use, in particular to residential development. It presents National Statistics on these changes in land use in England recorded in 2015-16. Statistics on changes within the Green Belt and changes within areas of high flood risk are also presented.

## Changes to the methodology

This is the third publication of the land use change statistics using a methodology based on changes in Ordnance Survey products rather than from the physical observations that informed the previous series.

The statistics are produced from two underlying data sets:

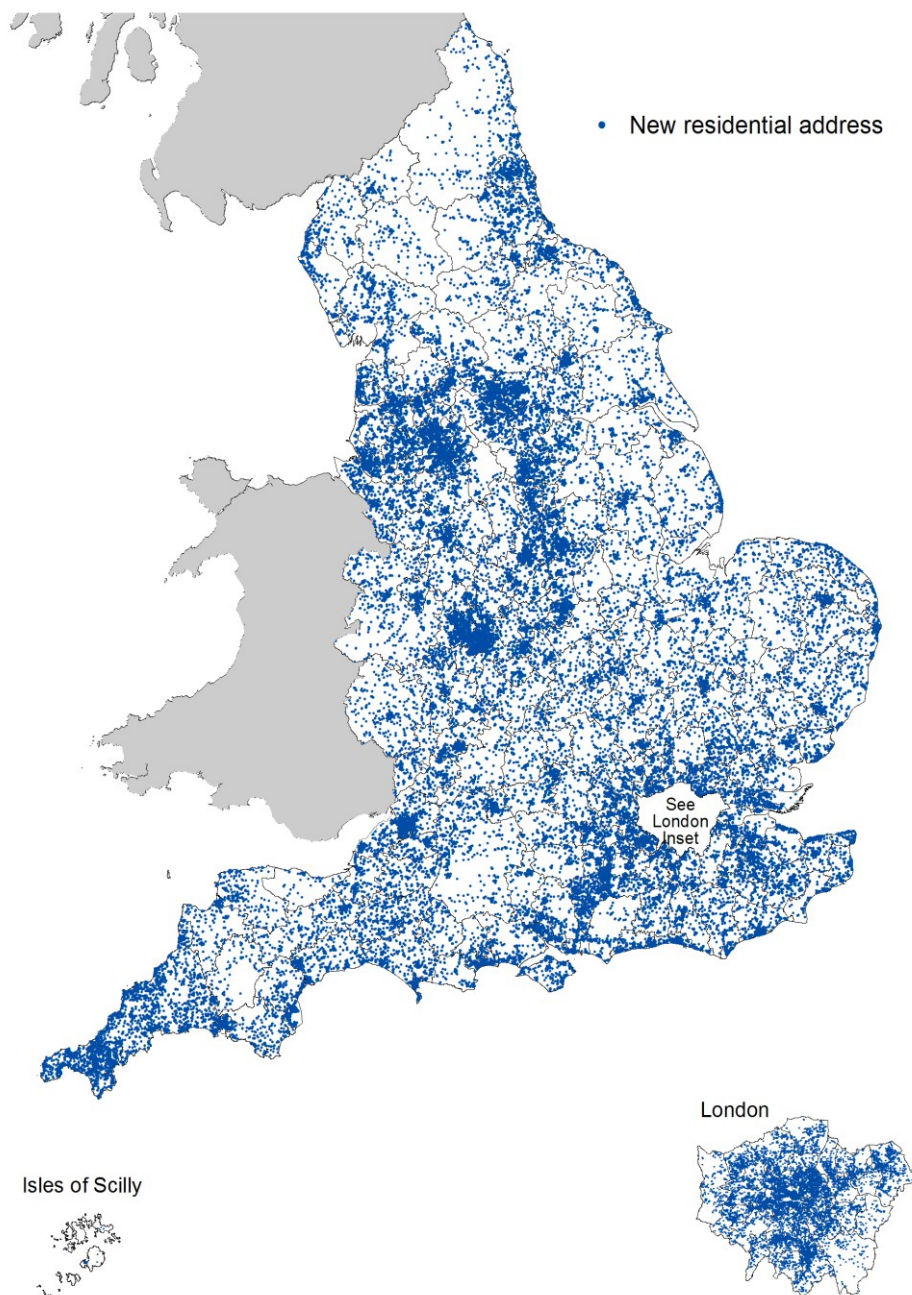
- The address-based data set provides statistics on the creation and deletion of residential addresses and changes in density. This data set provides all of the headline messages in the statistics and all the data in live tables P300 to P349.
- The land use based data set covers statistics on the physical area of land changing use and includes all of the data provided in live tables P350 onwards. Please note, however, that quality assurance procedures are ongoing regarding the data on changes in land usage. The tables and statistics relating to the areas of land changing use have therefore been omitted from this release. An update will be provided in due course.

Users should be aware that the estimate of the number or residential address created was found to fluctuate between years at a local authority level. Statistics at this level will therefore be made available as a three year average.

# Changes to residential use

The latest national estimates for changes to residential use are for 2015-16. The statistics show how much residential development has taken place on previously-developed and previously undeveloped land. The distribution of new residential addresses recorded during 2015-16 is shown in **Map 1**, to put the rest of the findings into context.

**Map 1: New residential addresses recorded, England 2015-16**



Produced by the Housing and Planning Analysis Division, DCLG  
© Crown copyright and database rights 2015 Ordnance Survey 100024857

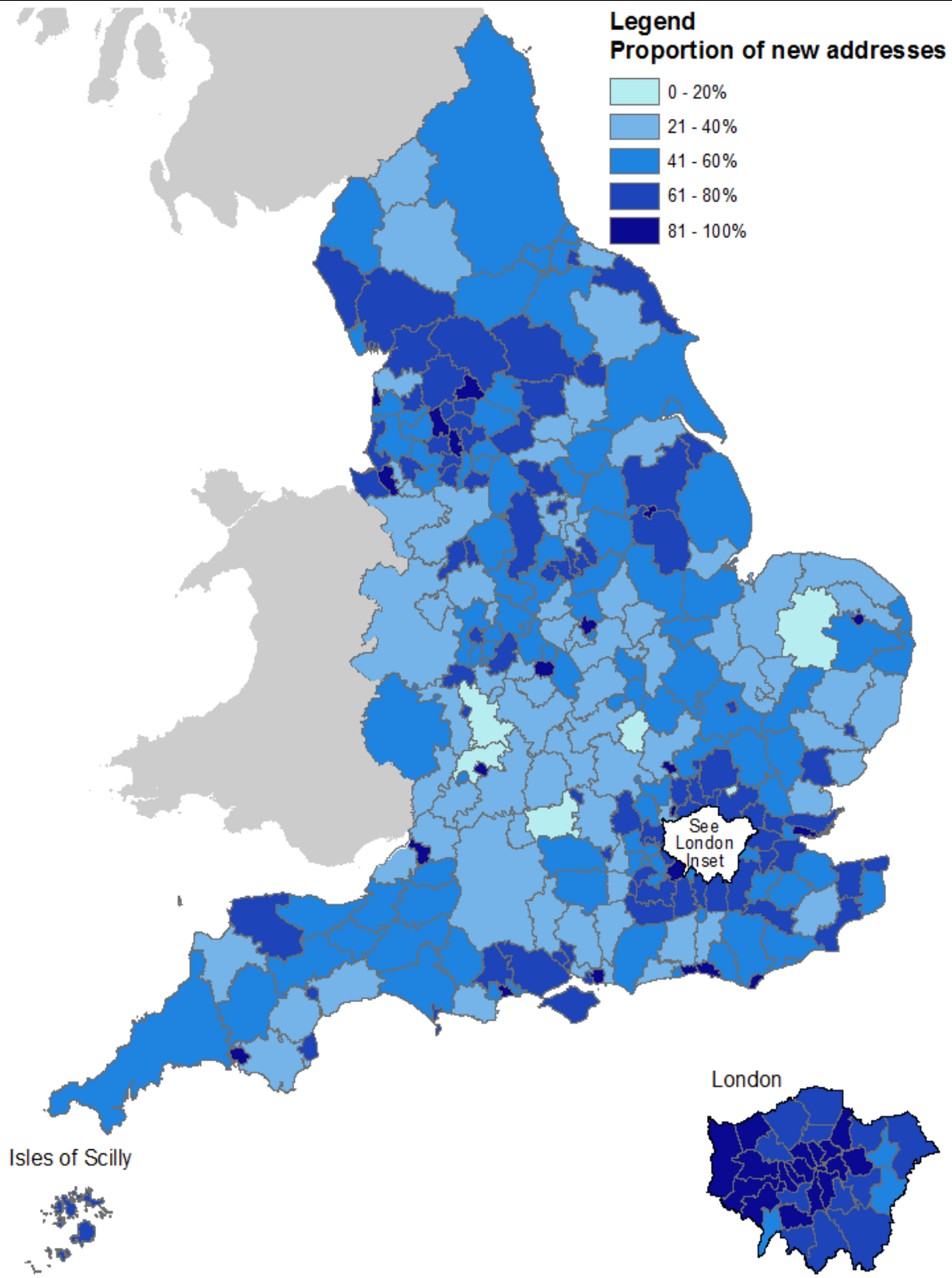
Data Sources  
OS Boundary-Line

The proportion of new residential addresses created, including conversions to residential use, on previously developed land was 61 per cent in 2015-16. This is an increase of three percentage points compared to 2014-15.

Excluding conversions, the proportion of new residential addresses created on previously developed land was also 61 per cent in 2015-16. This is an increase of four percentage points compared to 2014-15.

There was wide variation in the proportion of new residential addresses created on previously developed land between local authorities in England. The lowest proportion, averaged over three years, was 15 per cent (Vale of White Horse District and Wychavon District) of all new addresses created and the highest was 100 per cent (City of London). More details are shown in **Map 2**.

**Map 2: Proportion of new addresses created on previously developed land, England 2013-16**



Produced by the Housing and Planning Analysis Division, DCLG

© Crown copyright and database rights 2015 Ordnance Survey 100024857

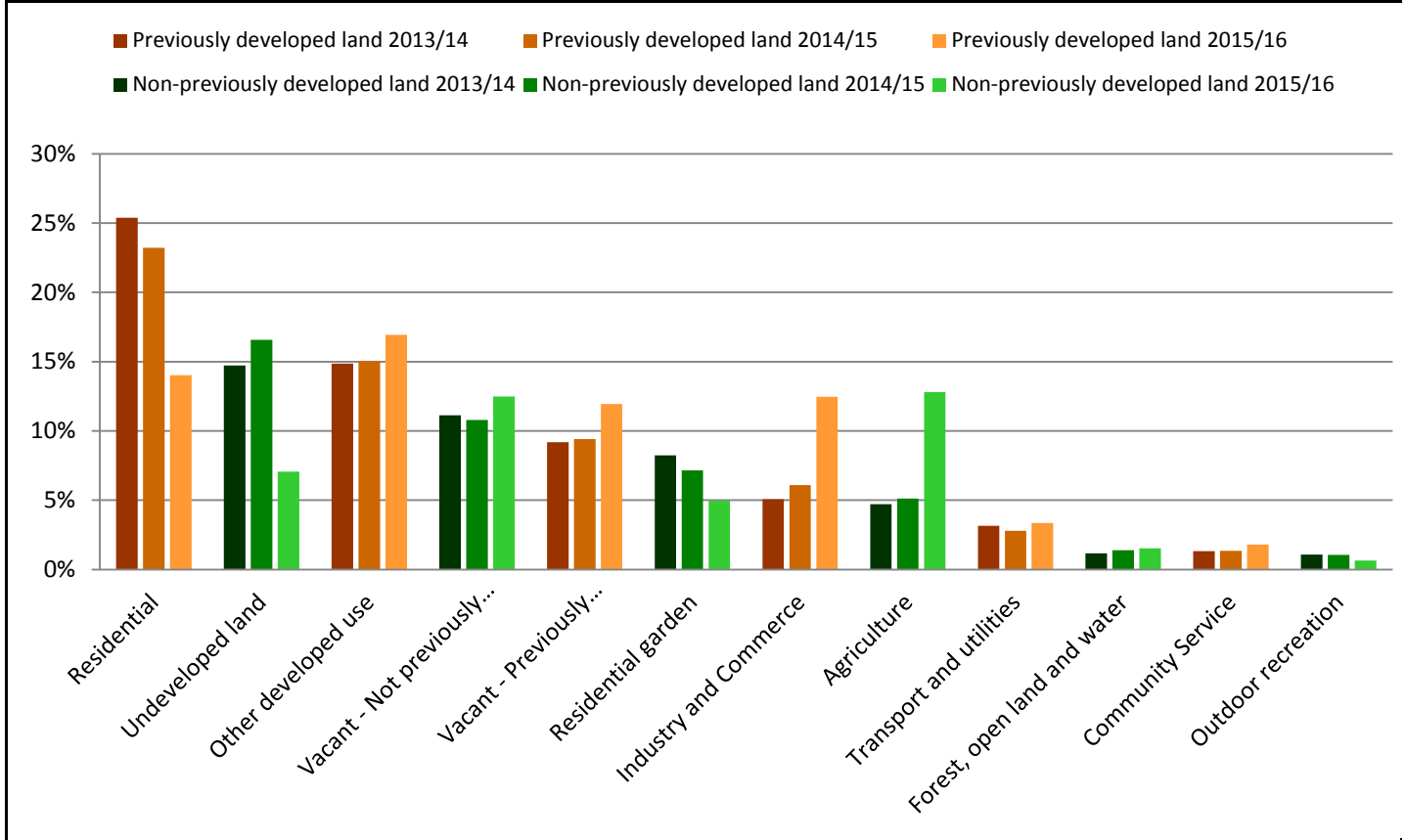
**Data Sources**  
OS Boundary-Line

In 2015-16, the main previous land use categories on which a residential address was created were:

- 'Other developed use', at 17 per cent of all addresses created;
- Residential land, at 14 per cent of all addresses created; and
- Agricultural land, at 13 per cent of all addresses created.

More details are shown in **Figure 1**. The groups used are as listed in Table BN in the Notes section of this release.

**Figure 1: Proportion of new addresses created on previously developed and non-previously developed land, England 2013-16**



Detailed statistics on residential development on previously-developed land (including data at a local authority level) can be found in the Land Use Change Statistics Live Tables, numbers P300, P301 and P302.

## Density of new dwellings

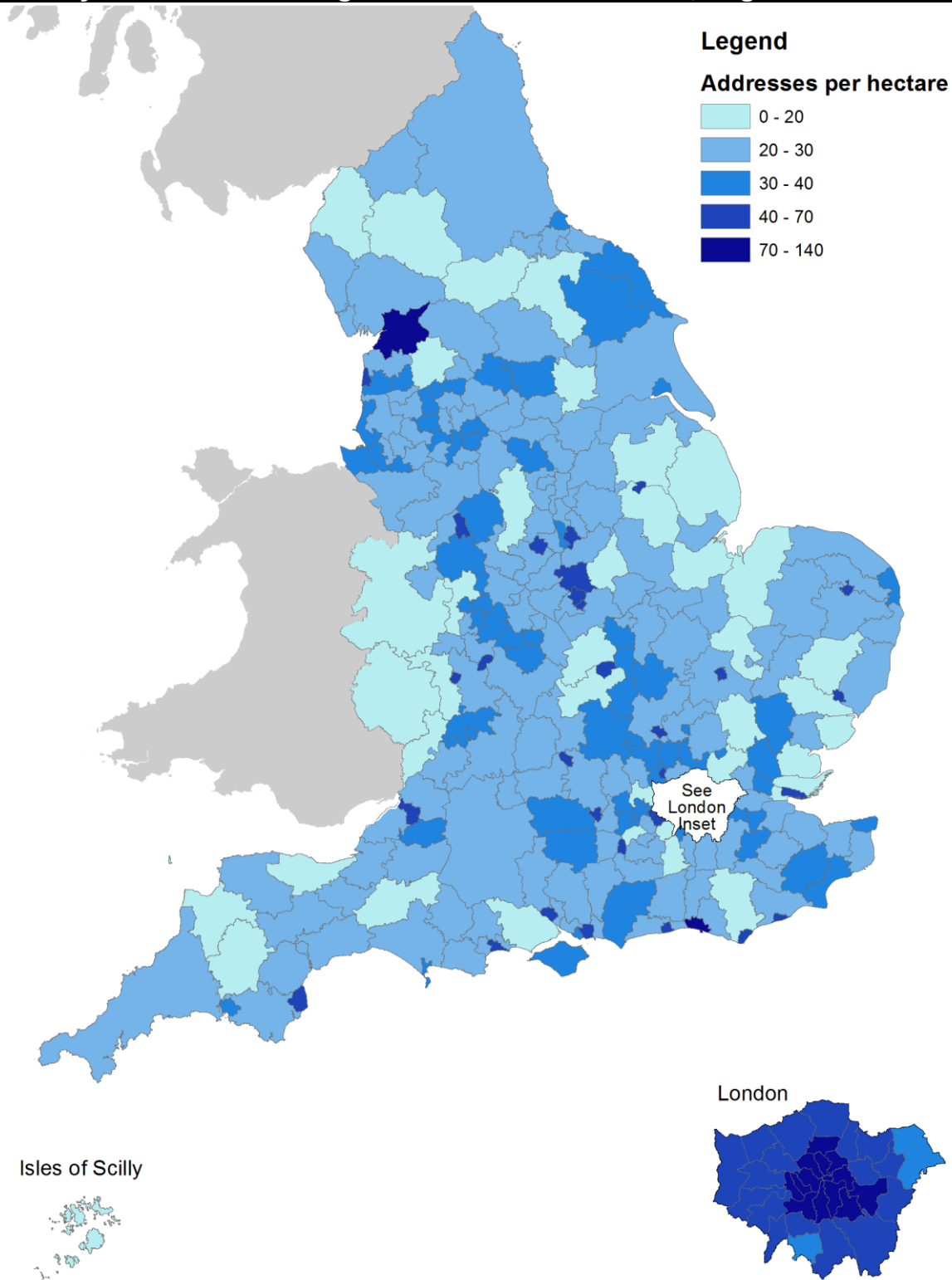
In 2015-16, the average density of residential addresses surrounding a newly created residential address was 32 addresses per hectare. This is an increase on the 31 addresses per hectare in 2014-15.

For previously developed land, the density was higher at 37 addresses per hectare, the same level as in 2014-15. For non-previously developed land, the density was lower at 26 addresses per hectare. This is a decrease on the 27 addresses per hectare recorded in 2014-15.

Within the Green Belt, the density was 14 addresses per hectare. This is a decrease on the 16 addresses per hectare recorded in 2014-15.

More details are shown in **Map 3**.

**Map 3: Density of area surrounding new residential addresses, England 2013-16**



Produced by the Housing and Planning Analysis Division, DCLG

Data Sources  
OS Boundary-Line

© Crown copyright and database rights 2015 Ordnance Survey 100024857

*Detailed statistics on the average density of new dwellings (including data at a local authority level) can be found in the Land Use Change Statistics Live Tables, numbers P330 and P331.*



# Changes within the Green Belt

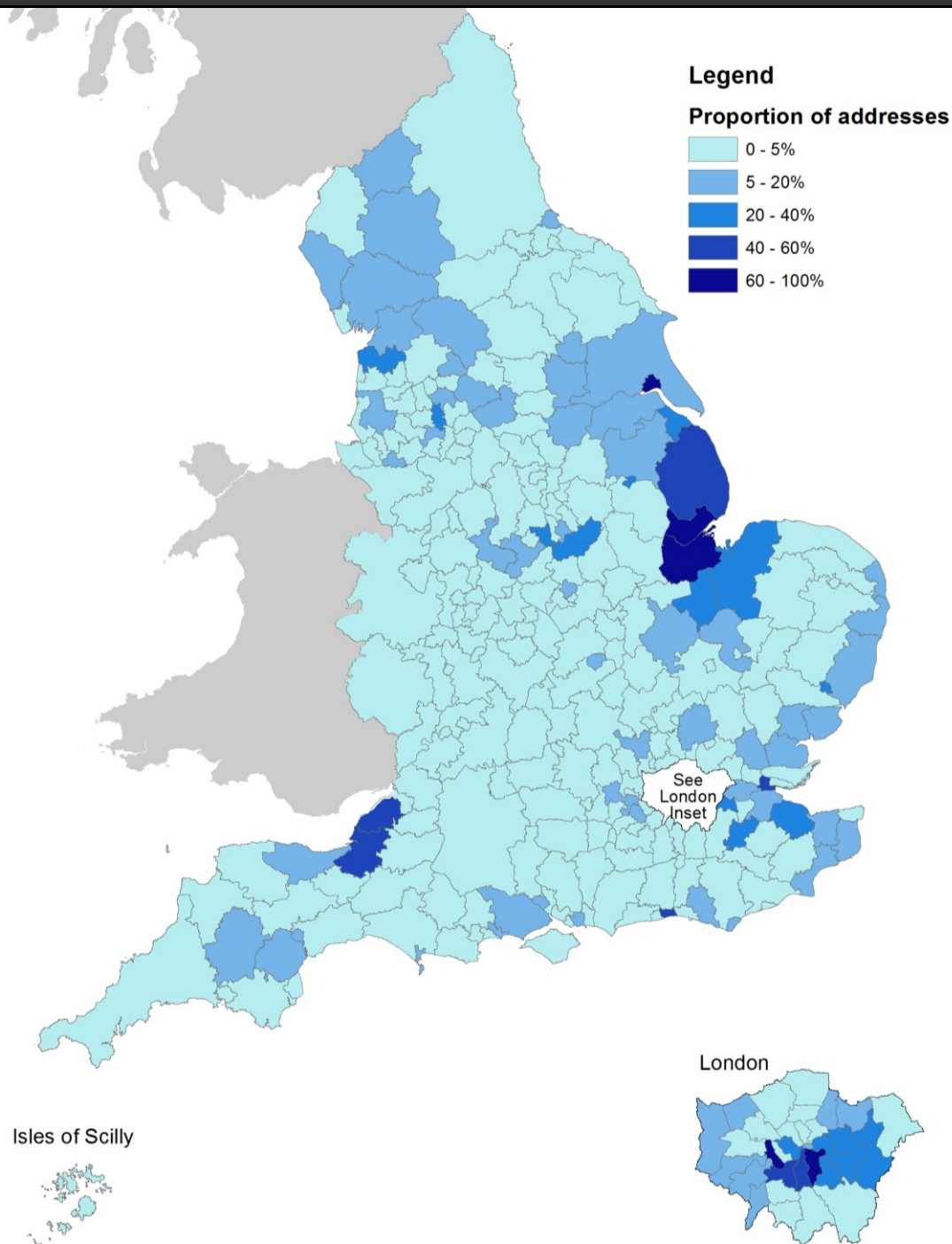
- In 2015-16, two per cent of new residential addresses created were within the Green Belt. This is a decrease from the three per cent recorded in 2014-15.
- In 2015-16, 57 per cent of new residential addresses created within the Green Belt were built on previously-developed land. This is an increase on the 56 per cent recorded in 2014-15.

*Detailed statistics on changes within the Green Belt can be found in the Land Use Change Statistics Live Tables, numbers P310 to P311 and P380 to P383.*

# Changes within areas of high flood risk

- In 2015-16, nine per cent of new residential addresses were created within areas of high flood risk, defined as National flood zone 3. This is an increase on the eight per cent recorded in 2014-15. More details are given in the Notes section of this release and **Map 4**.

**Map 4: Proportion of new addresses created in National flood zone 3, England 2013-16**



Produced by the Housing and Planning Analysis Division, DCLG

© Crown copyright and database rights 2015 Ordnance Survey 100024857

Data Sources  
OS Boundary-Line

# Accompanying tables

Accompanying Live Tables are available to download alongside this release. These tables can be accessed at:

<https://www.gov.uk/government/collections/land-use-change-statistics>

- P300 Address Change: Proportion of new residential addresses created by previous developed usage
- P301 Address Change: Proportion of new residential addresses created by previous land usage category
- P302 Address Change: District authorities - Proportion of new residential addresses created by previous land usage category
- P310 Address Change: Proportion of new residential addresses created in the Green Belt by previous developed usage
- P311 Address Change: District authorities - Proportion of new residential addresses in the Green Belt
- P320 Address Change: Proportion of new residential addresses created in National Flood Zone 3 by previous developed usage
- P321 Address Change: District authorities - Proportion of new residential addresses created in National Flood Zone 3
- P330 Address Change: Average density of residential addresses surrounding newly created residential addresses
- P331 Address Change: District authorities - Average density of residential addresses surrounding newly created residential addresses by previous land usage

Previous DCLG statistical releases are available under the archived publications section.

# Technical notes

## Land use context

England has a land area of just over 13 million hectares. Of this area only about 11% is developed<sup>1</sup>. Around 13% of England is Green Belt, encircling 14 urban areas and about 30 million people<sup>2</sup>. The aim of Green Belt Policy is to prevent urban sprawl by keeping land permanently open. Other environmentally protected designations such as National Parks, Areas of Outstanding Natural Beauty and Sites of Special Scientific Interest total about another 30% of the total area of England<sup>3</sup>. Together, allowing for overlaps, around 40% (5.3m hectares) of the total land area of England is protected against development by these designations.

## Data collection

When a new residential address is recorded in Ordnance Survey's AddressBase product, the subsequent data it provides to the department include:

- the grid reference
- the local authority in which the address is located
- the inferred previous uses of the address site
- the number of residential addresses created
- the number of residential addresses deleted
- the number of addresses converting to or from residential use
- the density of all residential addresses in the hectare surrounding a new residential address

## Data quality

Information is published at several geographical levels such as nationally and by local authority. Statistics are also calculated on other geographies, such as the Green Belt or areas of high flood risk.

Data at local authority level on residential addresses is available annually, but data on land use change will be made available only as an average over several years. This is because annual data at this spatial scale are highly volatile and not robust. However, annual estimates at national level are considered robust.

The Ordnance Survey's data products that were used to derive the land use change data are subjected to numerous quality assurance tests to meet the required quality criteria before their publication and subsequent use in the Land Use Change Statistics methodology.

---

<sup>1</sup> Derived from Office for National Statistics [Built up Areas 2011](#)

<sup>2</sup> Derived from data published by the department and Natural England

<sup>3</sup> Derived from data published by the department and Natural England

Prior to the department formally taking receipt of the land use change data, Ordnance Survey has checked it meets the required performance criteria and worked with the departments' statisticians to test, develop and improve the outputs' validity.

The individual land use and residential address changes provided by Ordnance Survey are checked for records displaying potential anomalies, such as unusually high or low densities, or identified sites of residential changes with homes not yet built. Such anomalous entries are then queried with Ordnance Survey and if necessary amended. The records which have passed this stage are then reconfigured within the department's database.

The department aggregates the data to local authority and national level and performs analysis against boundary files of the Green Belt and areas of high flood risk. The department's statisticians compare the aggregated data against previous and current data for comparable LA areas and national trends.

The department has published a quality assurance statement alongside this publication of the Land Use Change Statistics. This document gives a full overview of the quality assurance procedures in place. It has been produced in conjunction with the UK Statistics Authority's guidance on using administrative data.

<https://www.statisticsauthority.gov.uk/monitoring-and-assessment/monitoring/administrative-data-and-official-statistics/>

### **Corrections for high density addresses**

There are a few instances when a local authority, for whatever reason, has populated the data fields governing the positional accuracy of an address' coordinates incorrectly. These can generate multiple addresses clustering in imprecise locations and in turn this can result in distorted density calculations.

To identify errors of this nature the department analyses local authorities with a high standard deviation in density (over 100) and have all points with a density of over 100 addresses per hectare investigated, to see if they correlate with real world evidence. Those points which do not appear to match to real world change are excluded from the final analysis.

For 2015-16, this resulted in the exclusion of 34 points from the following local authorities:

- Castle Point (33 points)
- Northampton (one point)

The estimates of the number of residential address created were found to fluctuate between years at a local authority level. Therefore statistics at this level will be made available as a three year average.

### **Residential address creation at local authority level**

Ordnance Survey AddressBase® is the key product for identifying the residential address change data in the land use change statistics.

The information for AddressBase® comes predominantly from local authorities, who work with various sources in their organisation; council tax, electoral registration, planning and building control (amongst others) to identify and verify the existence and location of properties and their official address.

The timeliness of the data updates from local authorities feeding into address base can be variable resulting in fluctuating numbers of residential address created. This causes variations in the estimates at local authority level. Therefore statistics at this level will still be made available but as a two year average.

## Revisions policy

This policy has been developed in accordance with the UK Statistics Authority Code of Practice for Official Statistics and the Department for Communities and Local Government Revisions Policy (found at <https://www.gov.uk/government/publications/statistical-notice-dclg-revisions-policy>).

There are two types of revision that the policy covers:

### **Non-Scheduled Revisions**

Where a substantial error has occurred as a result of the compilation, imputation or dissemination process, the statistical release, live tables and other accompanying releases will be updated with a correction notice as soon as is practical.

### **Scheduled Revisions**

Each annual version of the Land Use Change Statistics publication is produced from static versions of Ordnance Survey products and as such is not usually subject to any scheduled revisions.

## User engagement

Users are encouraged to provide feedback on how these statistics are used and how well they meet user needs. Comments on any issues relating to this statistical release are welcomed and encouraged. Responses should be addressed to the "Public enquiries" contact given in the "Enquiries" section below.

The department's engagement strategy to meet the needs of statistics users is published here: <https://www.gov.uk/government/publications/engagement-strategy-to-meet-the-needs-of-statistics-users>

## Notes

1. The land use categories used in compiling LUCS data are shown below in Table BN1. For full details on what are included in these groups and categories please refer to the [Land use change statistics methodology changes guidance](#).

**Table BN 1: Land use categories, groups and divisions**

Previously developed land			Non-previously developed land		
Group	Category (codes)		Group	Category (codes)	
<b>Residential</b>	<input type="checkbox"/> Residential	(R)	<b>Agriculture</b>	<input type="checkbox"/> Agricultural land	(A)
	<input type="checkbox"/> Institutional and communal Accommodation	(Q)		<input type="checkbox"/> Agricultural buildings	(B)
<b>Transport and Utilities</b>	<input type="checkbox"/> Highways and road transport	(H)	<b>Forestry, open land and water</b>	<input type="checkbox"/> Forestry and woodland	(F)
	<input type="checkbox"/> Transport (other)	(T)		<input type="checkbox"/> Rough grassland and Bracken	(G)
	<input type="checkbox"/> Utilities	(U)		<input type="checkbox"/> Natural and semi-natural Land	(N)
<b>Industry and Commerce</b>	<input type="checkbox"/> Industry	(I)	<input type="checkbox"/> Water	(W)	
	<input type="checkbox"/> Offices	(J)	<b>Outdoor recreation</b>	<input type="checkbox"/> Outdoor recreation	(O)
	<input type="checkbox"/> Retailing	(K)			
	<input type="checkbox"/> Storage and warehousing	(S)			
<b>Community Services</b>	<input type="checkbox"/> Community buildings	(C)	<b>Vacant</b>	<input type="checkbox"/> Vacant land not previously developed (V - NPDL)	
	<input type="checkbox"/> Leisure and recreational Buildings	(L)			
<b>Vacant</b>	<input type="checkbox"/> Vacant land previously Developed	(V - PDL)	<b>Residential Gardens</b>	<input type="checkbox"/> Residential Gardens	(RG)
<b>Minerals and landfill</b>	<input type="checkbox"/> Minerals	(M)	<b>Undeveloped land</b>	<input type="checkbox"/> Undeveloped land in urban areas (X)	
	<input type="checkbox"/> Landfill waste disposal	(Y)			
<b>Defence</b>	<input type="checkbox"/> Defence	(D)			
<b>Other developed use</b>	<input type="checkbox"/> Unidentified building	(~B)			
	<input type="checkbox"/> Unidentified general manmade surface	(~M)			
	<input type="checkbox"/> Unidentified structure	(~S)			

2. The flood risk analysis in LUCS is based on annually updated data sets of digitised boundaries provided by the Environment Agency. The areas of high flood risk used cover approximately ten per cent of England. They reflect the river and coastal floodplains and provide indicative flood risk areas. They are areas estimated to be at risk of at least a one in one hundred chance of flooding each year from river areas or at least a one in two hundred chance of flooding from the sea. These are approximate boundaries and do not take into account any flood defences.

3. National Statistics are produced to high professional standards set out in the Code of Practice for Official Statistics.

4. Details of officials who receive pre-release access to LUCS up to 24 hours before release can be found at: <https://www.gov.uk/government/organisations/department-for-communities-and-local-government/about/statistics#pre-release-access-to-official-statistics>

# Enquiries

## Media enquiries:

office hours: 0303 444 2183

0303 444 1152

out of hours: 0303 444 1201

Email: <mailto:newsdesk@communities.gsi.gov.uk>

## Public enquiries and Responsible Statistician:

Insert Name

Email: <mailto:andrew.presland@communities.gsi.gov.uk>

Information on Official Statistics is available via the UK Statistics Authority website:

<https://www.gov.uk/government/statistics/announcements>

Information about statistics at DCLG is available via the department's website:

[www.gov.uk/government/organisations/department-for-communities-and-local-government/about/statistics](http://www.gov.uk/government/organisations/department-for-communities-and-local-government/about/statistics)



© Crown copyright, 2016

*Copyright in the typographical arrangement rests with the Crown.*

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, [www.nationalarchives.gov.uk/doc/open-government-licence/](http://www.nationalarchives.gov.uk/doc/open-government-licence/) or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk).

This document/publication is also available on our website at [www.gov.uk/dclg](http://www.gov.uk/dclg)

If you have any enquiries regarding this document/publication, email [contactus@communities.gov.uk](mailto:contactus@communities.gov.uk) or write to us at:

Department for Communities and Local Government  
Fry Building  
2 Marsham Street  
London  
SW1P 4DF  
Telephone: 030 3444 0000

November 2016

For all our latest news and updates follow us on Twitter: <https://twitter.com/CommunitiesUK>

ISBN: 978-1-4098-4951-3