The Scottish Government
Riaghaltas na h-Alba

Access to outdoor recreation by older people in Scotland

AGRICULTURE, ENVIRONMENT AND MARINE

social research

Access to outdoor recreation by older people in Scotland

Report for Rural Communities Research, Rural and Environment Science and Analytical Services (RESAS) Division, The Scottish Government

March 2016

Authors:

Kathryn Colley, Margaret Currie, Jonathan Hopkins, Patricia Melo

Social, Economic and Geographical Sciences (SEGS) Group

The James Hutton Institute, Craigiebuckler, Aberdeen.

Contents

Executive Summary

The need for a better understanding of the barriers to outdoor recreation by older people

Increasing people's use of Scotland's outdoors is one of the Scottish Government's National Indicators to track progress towards its strategic objectives, particularly those referring to a *healthier*, *safer and stronger*, and *greener* Scotland. Increasing participation in outdoor recreation is also of relevance to the Land Use Strategy objective for communities to be better connected to the land, as well as the Physical Activity Implementation Plan and National Walking Strategy. Official statistics on outdoor recreation visits amongst the Scottish population show that older adults are less likely than young and middle-aged adults to engage in outdoor recreation on a regular basis. Whilst there is abundant evidence on the benefits derived from participation in outdoor recreation, there is less understanding of the barriers that discourage or prevent older people from participating in outdoor recreation. The purpose of this research is to improve our understanding of the factors impeding older people, including older people with disabilities, from accessing and using outdoor recreation opportunities, and explore how greater use of the outdoors amongst older people can be facilitated.

Research methodology

The research proceeded in two stages. The first stage investigated the spatial distribution of older people (i.e. population aged 65 or over and 85 or over), including older people with long-term health problems or disabilities, using small-scale geographical units (i.e. data zones) and the Scottish Government 8-fold urban-rural classification. The second stage of the research carried out case study work using semi-structured interviews to provide in-depth insight on the barriers experienced by older people. Twenty-seven participants took part across three case study sites varying in urbanity and access to different types of green/blue natural resources.

Remote areas have higher concentrations of older people and older people with health problems or disabilities

The results from the spatial distribution of older people and older people with long-term health problems or disabilities (stage 1) show that these groups of the population tend to be over-represented in remote/very remote small towns and rural areas. Although these figures represent considerably smaller absolute numbers of older people and older people with disabilities, when compared with large urban areas, the negative impacts on the well-being and resilience of local communities is likely to be stronger in remote/very remote small towns and rural areas. These areas are remote and hence face challenges in terms of accessibility to important medical and care facilities. The fact that isolated small towns in Scotland have significantly higher concentrations of older residents and older disabled residents should be acknowledged.

Barriers to participation in outdoor recreation are multiple and inter-related

The results from the case study work (stage 2) revealed that the barriers to participation in outdoor recreation by older people are multiple and inter-related. The interplay and interactions between barriers are important as the co-occurrence of multiple barriers is common and intensifies the effect of individual barriers to participate in outdoor recreation. The key categories of barriers identified in the interviews were: poor health and (im)mobility; lack of or reduced social connections; fragility and vulnerability; lack of motivation and time commitments; safety; and weather and season.

- **Poor health and (im)mobility.** Many of the participants faced lifelong and/or temporary heath conditions, often multiple conditions that limited their mobility and consequently their ability to participate in outdoor recreation.
- **Lack of or reduced social connections.** Many of the participants acknowledged preferring to go out with other people, particularly people they already know. Some participants had stopped, or reduced the frequency of, going into the outdoors because they had lost the companionship of someone to go with (especially losing a spouse and/or a friend). However, some participants also mentioned they preferred going into the outdoors alone or with people who are quiet.
- **Fragility and vulnerability.** Many of the participants were worried about going into the outdoors, especially if they were alone, mostly due to a fear of falling and compromising their future independence.
- **Lack of motivation and negative attitudes.** Some participants mentioned not being bothered to go out, but of these participants there were some who were encouraged to go out by other people (e.g. spouses). Others felt that it was important to be self-motivated. Outdoor recreation may also be associated with being ‘sporty’, which may discourage some. Dogs may be an important motivation for some to get out more.
- **Time commitments.** Many participants described themselves as having busy lives which acted as a barrier for them to get into the outdoors. The other activities which often took precedence included organised social activities and clubs, volunteering and other community work, taking care of their home and garden, and caring responsibilities. This challenges the perception that time is not a barrier to older people’s participation in outdoor recreation.
- **Safety.** The majority of participants mentioned not being scared of being in the outdoors. However, two types of safety fears were mentioned by participants: fear of being attacked by people and dogs, and fear of falling and no-one being able to help. Female participants seemed to face a greater barrier in terms of fear of being attacked than male participants.
- **Weather and season.** Bad weather generally appeared to put participants off wanting to go into the outdoors, especially because it was felt to aggravate particular health conditions.

Moments of change in participation in outdoor recreation throughout the life course

A life history approach was used to identify key 'moments of change' in people’s lives where the extent or form of engagement with the outdoors had shifted considerably, giving a useful perspective on how interventions might best be timed during individual’s life course. Among the different key moments of change identified, four seemed to be more strongly associated with

changes in the level of participation in outdoor recreation: children growing up; retirement; the onset of health problems; spouses or friends or dogs passing away.

Outdoor recreation vs. being active out-of-doors

The interpretation of 'outdoor recreation' is not unambiguous and can mean different things to different people. For some people the most important aspect of ‘getting outdoors’ is getting out of the house. The setting is not necessarily seen as being as important for wellbeing as getting out and about and seeing other people. Moreover, for several participants physical activity often took place through active travel or recreational walking in the built environment and hence was not (uniquely) derived from engaging in outdoor recreation. In rural areas the distinction between built and natural environments may be less meaningful to residents.

Some key implications for policy and practice

- Interventions need to **take into consideration the interactions between barriers** and should aim to **address multiple barriers simultaneously**. Doing so may require **co-ordinated action between different bodies from the public sector** (e.g. NHS Scotland, Scottish Natural Heritage (SNH), Forestry Commission Scotland, local authorities), **the third sector** (e.g. local community and voluntary groups), and **the private sector** (e.g. social enterprises);
- **“Green prescribing”** by doctors and medical professionals may be a valuable way to promote outdoor recreation amongst older people and **should be integrated with other initiatives** (e.g. walking groups) **which offer opportunities for overcoming social and motivational barriers**;
- More generally, interventions should aim to **address social barriers** and may benefit from positioning themselves more in terms of social benefits than physical activity;
- Interventions should **target not only the specific individual but also his/her immediate network of relatives and friends**;
- Interventions may be more effective at increasing participation in outdoor recreation by considering how they might **target people at points in their life when engagement with the outdoors is subject to change**;
- **Walking groups may offer a more resilient basis for outdoor recreation** since members can come and go whilst the continuity of the group is retained. **Local authorities should work in conjunction with local groups to communicate and integrate the range of activities and groups operating at different levels of abilities and preferences.**

1. Introduction

1.1 Background

This research is inspired by topic 2 on the CAMERAS evidence plan – "Good practice in making a difference to people with protected equalities characteristics in their access, influence on decisions and use of the outdoors". There are nine "protected" characteristics defined by the Equality and Human Rights Commission in Scotland - age, disability, sex, race, religion or belief, pregnancy and maternity, marriage and civil partnership, sexual orientation, and gender reassignment.[1] Seven categories are used in the Scottish Government Equality Evidence Strategy 2014: age, disability, race, sex, religion, sexual orientation and gender reassignment.[2] The main focus of the research is on age and disability, including older people with disabilities.

Data on outdoor recreation visits amongst the Scottish population highlights that older adults are less likely than young and middle-aged adults to engage in outdoor recreation on a regular basis (Figure 1).

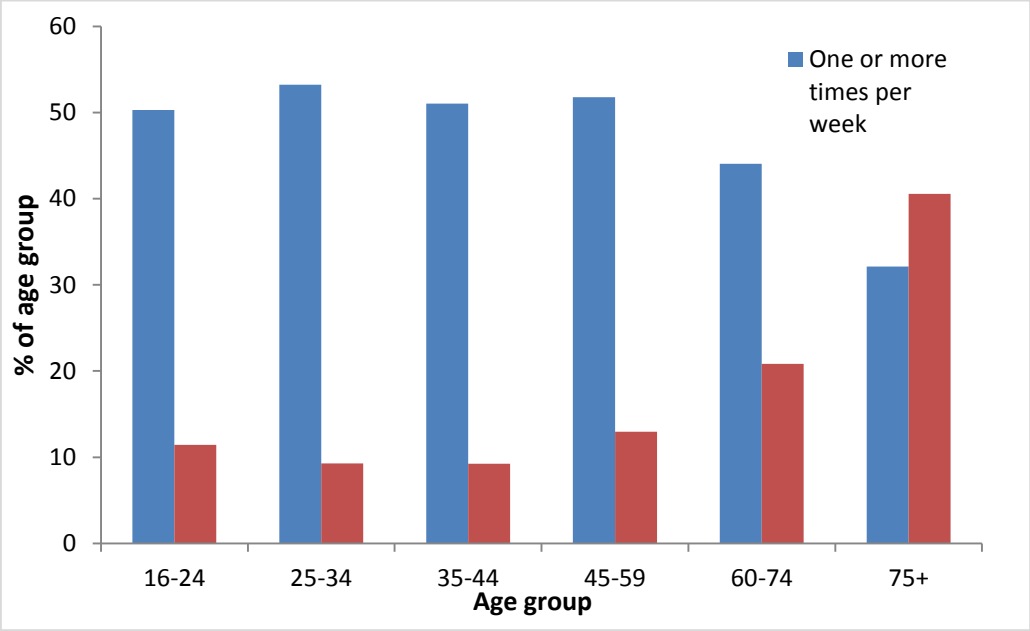


Figure 1: Frequency of visits made to the outdoors in the previous 12 months, by age groups.

Source: Based on Table 11.9 of "Scotland's People Annual Report: Results from the 2014 Scottish Household Survey".[3]

[1] http://www.equalityhumanrights.com/private-and-public-sector-guidance/guidance-all/protected-characteristics.
[2] http://www.scotland.gov.uk/Resource/0044/00443667.pdf.
[3] See http://www.gov.scot/Resource/0048/00484186.pdf (accessed August 2015).

Increasing use of the outdoors forms one of the Scottish Government's National Indicators to track progress towards its strategic objectives of creating a wealthier, fairer, healthier, *safer*, *stronger*, *smarter*, and *greener* Scotland.[4] Participation in outdoor recreation is also of relevance to the Land Use Strategy[5] objective for communities (rural and urban) to be better connected to the land, with more people enjoying the land, as well as to the delivery of the Physical Activity Implementation Plan[6] and National Walking Strategy[7]. This research supports these policies by providing evidence to inform the provision of equal opportunities to participate in outdoor recreation for older people.

There is a wealth of evidence on the benefits derived from great use of outdoor recreation areas (Irvine et al., 2013; Mitchell, 2013), but there is less understanding of the particular barriers that discourage or prevent older people from participating in outdoor recreation. The main aim of the research is to improve our understanding of the factors impeding older people, including older people with disabilities, from accessing and using outdoor recreation areas and evaluate whether the importance of these factors differs between rural and urban areas.

Illustrative examples of 'outdoors' areas include local parks and open spaces, woodlands and forests, and water-related amenities including beaches, river banks and shores of lakes (often refered to as 'blue space' by academics and policymakers). This project considered only a selection of 'outdoors' areas referring to greenspace and bluespace. In this report we adopt the definitions of 'outdoors' and 'outdoor recreation' used by Scottish Natural Heritage in Scotland's People and Nature Survey (SPANS) 2013/14 report:[8]

- Outdoors – mountains, moorland, farmland (enclosed and unenclosed), forests, woods, rivers, lochs and reservoirs, beaches and the coast, and open spaces in towns and cities.

- Outdoor recreation – any non-motorised activity carried out for leisure purposes and includes activities granted a statutory right of access under Part 1 of the Land Reform (Scotland) Act 2003 (e.g. walking, cycling and picnicking).[9]

1.2 Objectives and research questions

As stated above, this research aims to improve existing understanding of the factors hindering older people, and older people with disabilities, from participating in outdoor recreation. To achieve this aim, we have defined specific inter-related objectives and research questions. The first objective consists of investigating the spatial distribution of older people and older people with disabilities across Scotland to assess whether, and if so how, these groups of people are under- or over-represented in certain parts of Scotland, particularly between urban and rural

[4] National Indicators: http://www.gov.scot/About/Performance/scotPerforms/indicator (accessed Januray 2016).
[5] http://www.gov.scot/Topics/Environment/Countryside/Landusestrategy.
[6] http://www.gov.scot/Publications/2014/02/8239.
[7] http://www.gov.scot/Publications/2014/06/5743.
[8] http://www.snh.gov.uk/docs/A1471713.pdf (see 'definitions' in page 9 of the report).
[9] Under the Land Reform (Scotland) Act 2003 and the Scottish Outdoor Access Code, access rights extend to a person with a disability who is using a motorised vehicle or vessel built or adapted by that person. Two of the participants in our study used motorised mobility scooters to engage in outdoor recreation; these individuals, as well as their thoughts and opinions, were included as it was clear that their motorised activity was allowing them to access the outdoors for recreational purposes.

areas and accessible and remote areas. This can help identify possible hot spots requiring special attention. The second objective is to explore through selective case study work the barriers to access to and use of outdoor recreation faced by older people, including older people with disabilities, in Scotland.

The project searched for answers to the following research questions:

- How does the spatial distribution of older people, including those with disabilities, differ from that of the population as a whole? (objective 1)

- What are the main barriers to participation in outdoor recreation experienced by older people in Scotland and how can we facilitate greater use of the outdoors amongst older people? Do participants want to engage more with the outdoors? (objective 2)

These two objectives, and associated research questions, were addressed separately in two stages. To answer the first research question (stage 1) the team carried out GIS-based mapping of the distribution of the groups of people with the protected characteristics of interest to this study - age, disability - using data from the 2011 Population Census data and the Scottish Neighbourhood Statistics (SNS) and the Scottish Government (SG) 8-fold urban-rural classification. The findings from this analysis are presented and discussed in section 2 of the report. To address the second research question (stage 2) the team carried out qualitative primary data collection through case study work and semi-structured interviews with a sample of particular groups of older people to explore the main barriers to participation in outdoor recreation opportunities. The description of case study selection method, content of semi-structured interviews, and the findings from the case study analysis are presented and discussed in section 3 of the report.

In providing answers to the questions above, the project hopes to identify practical recommendations to the CAMERAS partners on how to improve levels of participation in outdoor recreation opportunities by older people, including older people with disabilities. In addition, the research carried out in the project provides a starting point for the work to be carried under Research Deliverable (RD) 3.4.3 Rural Landscapes and Community wellbeing of the new Strategic Research Programme 2016-2021 of Scottish Government's Rural and Environment Science and Analytical Services Division (RESAS).

1.3 Structure of the report

The report is organised in the following way. Section 2 provides a description of the GIS-based mapping of the spatial distribution of older people and people with disabilities using the Scottish Government 8-fold urban-rural classification. Section 3 presents the case study work carried out to investigate the barriers to participation in outdoor recreation by older people in Scotland, and discusses the main findings and conclusions. Section 4 presents the main conclusions of the project. Finally, section 5 provides a summary of the main recommendations to policy and practice arising from this work.

2. Spatial distribution of older people and disability in Scotland

2.1 Aim and approach

The first stage of the project consisted of investigating the spatial distribution of older people, including older people with disabilities, using small-scale geographical units (i.e. data zones). The aim is to evaluate and compare how these groups of people locate across Scotland using the Scottish Government 8-fold urban-rural classification defined at the level of data zones.[10] The eight types of areas are shown in Figure 2: Large Urban Areas (over 125,000 people); Other Urban Areas (10,000-125,000 people); Accessible Small Towns (3,000-10,000 people, within a 30 minute drive time to an urban area); Remote Small Towns (3,000-10,000 people, with a drive time between 30 and 60 minutes to aa urban area); Very Remote Small Towns (3,000-10,000 people, with a drive time of over 60 minutes to an urban area); Accessible Rural Areas (less than 3,000 people, within a drive time of 30 minutes to an urban area); Remote Rural Areas (less than 3,000 people, with a drive time of between 30 and 60 minutes to an urban area); Very Remote Rural (less than 3,000 people, with a drive time of over 60 minutes to an urban area).

Data zones are small geographical units derived from Census output areas, and are designed to contain between 500 and 1,000 household residents and be representative of communities, 'fit inside' larger boundaries (e.g. those of local authorities) and can be combined to other larger areas. Statistics based on data zones are therefore more 'fine-grained' than statistics presented for larger administrative areas (e.g. local authorities) and allow for a more detailed spatial analysis of the distribution of older people.

Whilst it is common knowledge that older people tend to be more prevalent in sparsely populated areas, there is limited understanding of how (if) this pattern differs across different types of rural areas and small towns, compared to urban areas. By combining data zone level data with the 8-fold urban-rural classification, we can provide a more detailed understanding of such patterns.

[10] http://www.gov.scot/Topics/Statistics/About/Methodology/UrbanRuralClassification (accessed 15th September 2015).

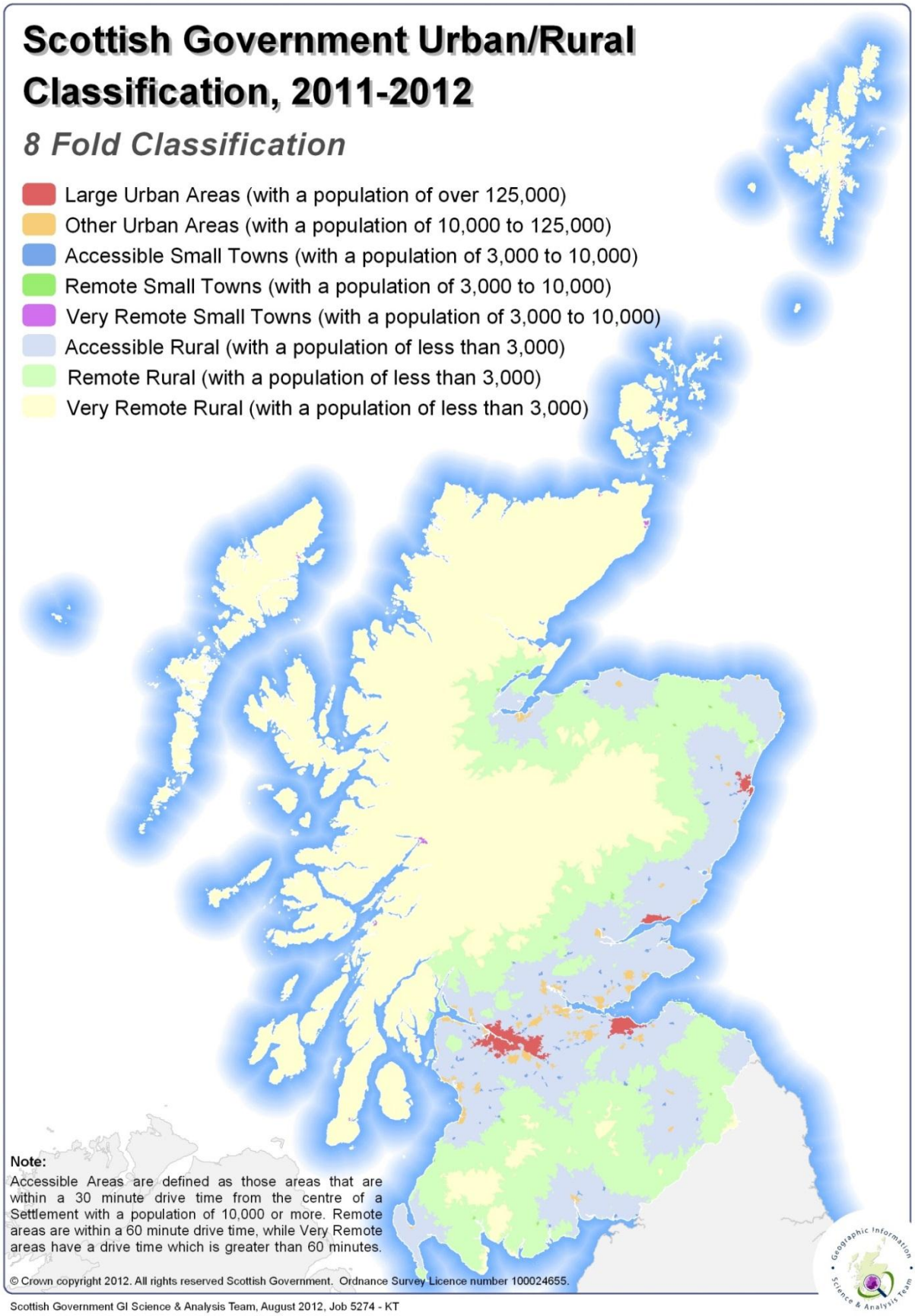


Figure 2: The 8-fold urban-rural classification, 2011/2012[11].

[11] Image downloaded from http://www.gov.scot/Resource/0039/00399139.zip (accessed 19th January 2016).

Data sources

The first task was to assess which data could be used to measure 'older people' and 'disability'. Based upon researchers' past experience in identifying and using small scale population data for other projects (e.g. Copus and Hopkins, 2015; Slee et al., 2014), Table A.1. in Appendix A provides a summary of the data sources used in the mapping and analysis of the spatial distribution of older people and people with disabilities. Two key sources of data were identified and used:

- **Scotland's Census 2011**. Data tables at 2011 data zone level were available from the Data Warehouse facility[12], as was an index of Census output tables.
- **Scottish Neighbourhood Statistics (SNS)** data download facility[13] provided a range of indicators related to population characteristics, services, communities and economic measures which are available at different geographical scales.

Defining older people and disability

The 2011 Census provided detailed information on population age, which was aggregated to produce totals of people aged 65 or over and 85 or over in each data zone. In addition, the household population who were both aged 65 or over, and were living alone/in one person households (a group who may be particularly isolated) was also extracted. The definition of disability within the Equality Act (Section 6(1) of the Equality Act 2010) provided guidance in the selection of variables. The total populations whose day-to-day activities were limited either 'a little' or 'a lot' by a long-term health problem or disability, and the numbers who reported[14] that they had a) a physical disability and b) a learning disability were derived and extracted at data zone level from Census tables. Additionally, the number of people who were both aged 65 or over, and had a limiting long-term health problem or disability, was identified and extracted.

In addition to the Census data, data on benefit claimants, hospital admissions and cancer registrations available via SNS were also used to measure the incidence of disability. As people with coronary heart disease and cancer are disabled[15], data available from SNS on the number of admissions to Scottish hospitals with a main diagnosis of these diseases was used (these data are based on data zone residents, rather than the location of hospitals)[16]. Furthermore, information on the number of new cancer registrations among data zone residents over the 2005-9 period was used. In addition, information on the number of claimants of Attendance Allowance, a benefit eligible to disabled people aged 65 or over for care purposes[17], was available via SNS for all people (aged 65 or over) and for men and women. Information for hospital admissions was based on the year 2012 and Attendance Allowance data used relates to the fourth quarter of 2012; data on new cancer registrations is based on the 2005-9 period as noted above.

[12] http://www.scotlandscensus.gov.uk/ods-web/data-warehouse.html#bulkdatatab.
[13] http://www.sns.gov.uk/Downloads/AdHocChoose.aspx. Link was correct at time of writing, however SNS has now migrated to Statistics.Gov.Scot website - http://statistics.gov.scot/.
[14] Reported within the Census: see Scottish Government (2014), page 106.
[15] See Equality Act 2010: Schedule 1, Part 1(6) and information at http://www.healthscotland.com/equalities/disability/index.aspx (accessed 15th September 2015).
[16] Source: ISD Scotland.
[17] https://www.gov.uk/attendance-allowance/eligibility (accessed 18th September 2015).

The spatial analysis considered the measures described above, which are shown in Table 1. For space reasons we present and discuss only the key variables of interest in the main body of the report (highlighted in bold in Table 1), while the remaining variables are presented and discussed in Appendix B.

Table 1: Measures of age and disability used in the spatial analysis.

Description	Protected characteristic(s)
• **Population aged 65/85 or over** • Household population aged 65 or over and living alone* • Male and female populations aged 65 or over*	• Age
• Population with limiting long-term health problem or disability* • Population with physical disability* • Population with learning disability* • Hospital admissions with a diagnosis of coronary heart disease* • Hospital admissions with a diagnosis of cancer* • Number of new cancer registrations*	• Disability
• **Population aged 65 or over, and with a limiting long-term health problem or disability** • **Claimants of Attendance Allowance** • Male and female claimants of Attendance Allowance*	• Age and disability

*The mapping and spatial analysis of these variables is presented in Appendix B.

Measuring the spatial distribution of older people and disability in Scotland

To evaluate the spatial distribution of older people, and older people with disabilities, across Scotland we compared the number of people with, or frequency of, protected characteristics in a given data zone with the number of people with, or frequency of, protected characteristics for the whole of Scotland. This was done by constructing *location quotients* for each of the variables in Table 1. Location quotients (LQ) provide an easy and intuitive way of quantifying the degree to which a certain attribute (e.g. age above 65 years) is concentrated in a given region compared to the national average (i.e. the reference). Consider the following example. Across Scotland, 16.8% of the population was aged 65 or over in 2011. If the proportion of people aged 65 or over was equally distributed across urban and rural areas in Scotland (i.e. zero concentration), the LQ would be equal to 1 (or 100%) for all rural and urban areas in Scotland. However, this is not likely to be the case and indeed we know that the ratio of local-to-national shares of older people tends to be greater than 1 (or 100%) for rural areas and smaller than 1 (or 100%) for urban areas. This in turn indicates that rural areas have higher shares of older people than *expected* (i.e. the national reference or average). The percentages can be interpreted in a straightforward way: a figure of 200% shows that the number of people with a protected characteristic is double that expected (i.e. according to national average), and a figure of 50% means that the population with a protected characteristic is exactly half that expected (i.e. according to national average). Table 2 shows the incidence of the measures considered in the spatial analysis for overall Scotland.

Table 2: Incidence of protected characteristics (age and disability) for overall Scotland.

Protected characteristic group	Specific characteristic/indicator	Denominator group	% / ratio
Age	Population aged 65 or over	Total population (2011)	16.81
Age	Population aged 85 or over	Total population (2011)	2.00
Age	Household population aged 65 or over and living alone	Total household population (2011)	6.00
Age	Male population aged 65 or over	Total population (2011)	7.25
Age	Female population aged 65 or over	Total population (2011)	9.57
Disability	Population with limiting long-term health problem or disability	Total population (2011)	19.65
Disability	Population with physical disability	Total population (2011)	6.71
Disability	Population with learning disability	Total population (2011)	0.50
Disability	Hospital admissions with a diagnosis of coronary heart disease	Total population (2012)	0.0049
Disability	Hospital admissions with a diagnosis of cancer	Total population (2012)	0.0267
Disability	Number of new cancer registrations	Total population (2009)	0.0273
Age and disability	Population aged 65 or over and with a limiting long-term health problem or disability	Total population (2011)	8.94
Age and disability	Claimants of Attendance Allowance	Total population (2012)	2.97
Age and disability	Male claimants of Attendance Allowance	Total population (2012)	0.97
Age and disability	Female claimants of Attendance Allowance	Total population (2012)	2.00

Statistics are percentages given to two decimal places, or the ratio of the number of hospital admissions in question/new cancer registrations to the total population (given to four decimal places). These figures were used to calculate the expected values in regions and data zones.

The location quotients (expressed in %) were calculated for the variables in Table 1 and each individual data zone to produce: (i) maps showing the values obtained for each individual data zone; (ii) summary tables showing the average values for each of the eight types of areas defined as per the SG 8-fold urban-rural classification. During the analysis, for some indicators, some of the more extreme data zone-level values are highlighted: these are identified as possible locations of interest and are not, by themselves, representative of Scotland-wide patterns.

Section 2.2 presents and discusses the main findings from the spatial analysis of older people (section 2.2.1.), older people with disabilities (section 2.2.2), and overall main conclusions (section 2.2.3.) .

2.2 Findings

2.2.1 Analysis by age

Overall, the information presented in tables 3-4 and figures 3-4 provides confirming evidence on some key well-know facts about population ageing, youth out-migration to cities, and age structures in Scotland: that there is a disparity in the share of older people in the total population

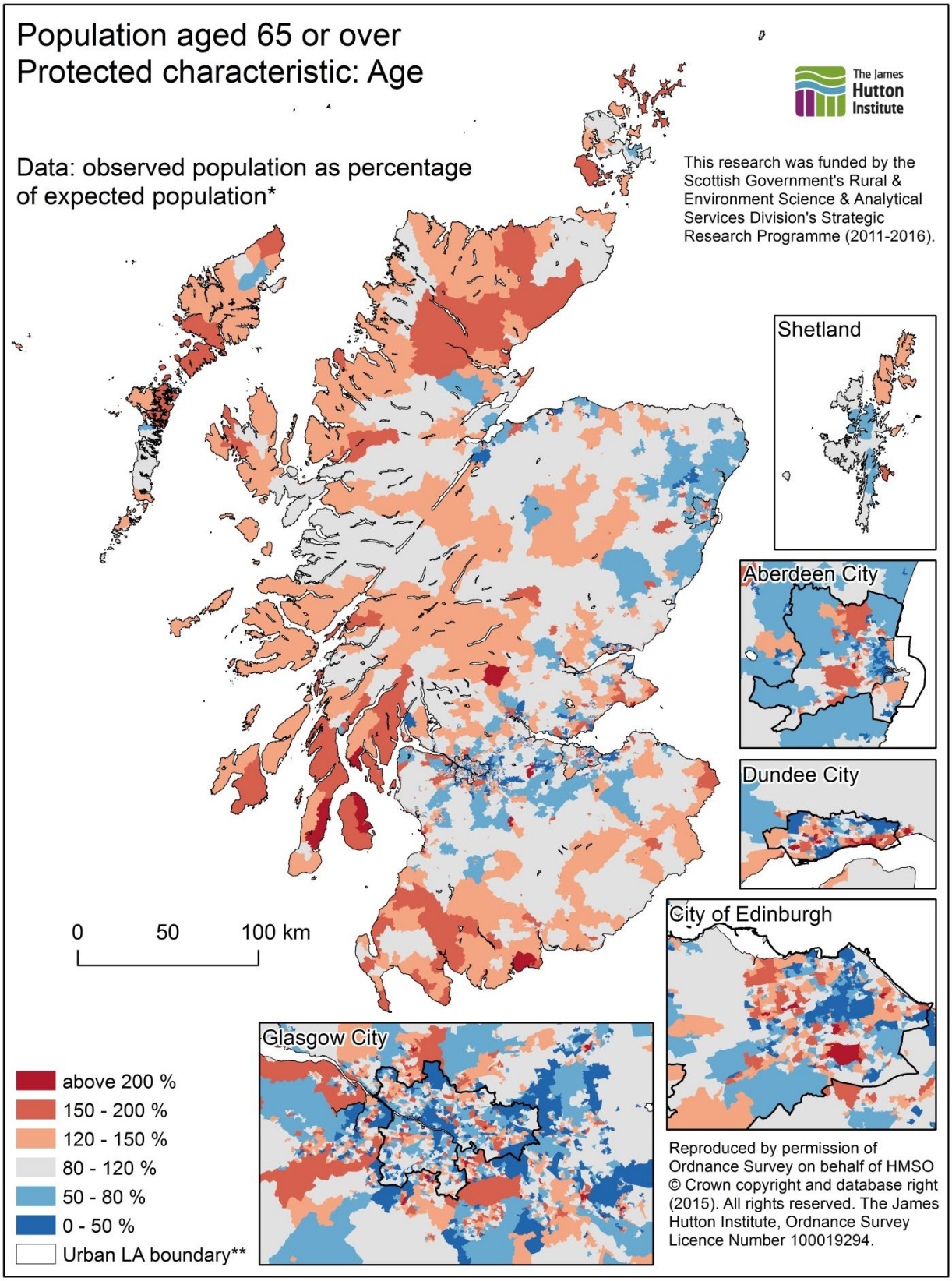
between urban and non-urban areas in Scotland, and that this disparity becomes significantly greater for remote parts of Scotland (i.e. 'remoteness effect'). The information presented also shows that in some cases accessible rural areas behave much in the same way as urban areas (Table 4). Despite these broad-brush patterns, however, there appears to be considerable variation in the spatial concentration of older people across data zones within each of the eight types of areas (figures 3-4).

Population aged 65 or over

Although urban areas contained around two thirds of Scotland's population aged 65 or over in 2011, the share of older residents who were living in large urban areas was below the national average, especially in large urban areas. On the other hand, the share of older residents was higher than expected (i.e. national average) for all types (i.e. accessible, remote, very remote) of small town and rural area, but was particularly higher for remote areas. There is hence evidence of a 'remoteness effect': residents aged 65 or over tended to be considerably more concentrated in remote and very remote areas. Remote small towns and very remote rural areas each had an older population that was almost 30% higher than that expected. This overall pattern is supported by data zone-based mapping in Figure 3, which suggests a tendency for more remote areas of Scotland (parts of Dumfries and Galloway, Argyll, some more isolated islands and the far north) to have well above-expected numbers and shares of older residents. By contrast, dark blue coloured areas (indicating that the population aged 65 or over was half that expected or less) were concentrated in the large cities, and areas surrounding Aberdeen, Edinburgh and Glasgow appear to have contained relatively low numbers of older residents. Very remote rural data zones where the population aged 65 or over was more than double that expected are at Dornoch (S01010760), Arran (S01011174 and S01011176) and parts of Argyll and Bute (S01007351, S01007354, S01007330).

Table 3: Population aged 65 or over.

Region	Total population	Population aged 65 or over	Population aged 65 or over (% of expected)	% of Scotland population	% of Scotland population aged 65 or over
Very Remote Rural	162,017	35,209	**129.25**	3.06	3.95
Remote Rural	168,013	35,024	**123.98**	3.17	3.93
Accessible Rural	588,757	105,354	**106.43**	11.12	11.83
Very Remote Small Towns	67,549	12,988	**114.36**	1.28	1.46
Remote Small Towns	134,493	29,102	**128.70**	2.54	3.27
Accessible Small Towns	472,352	85,329	**107.44**	8.92	9.58
Other Urban Areas	1,640,430	274,272	**99.44**	30.98	30.81
Large Urban Areas	2,061,792	313,056	**90.31**	38.94	35.16



* Expected population calculated from Data Zone population, and the proportion of Scotland's population aged 65 or over.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

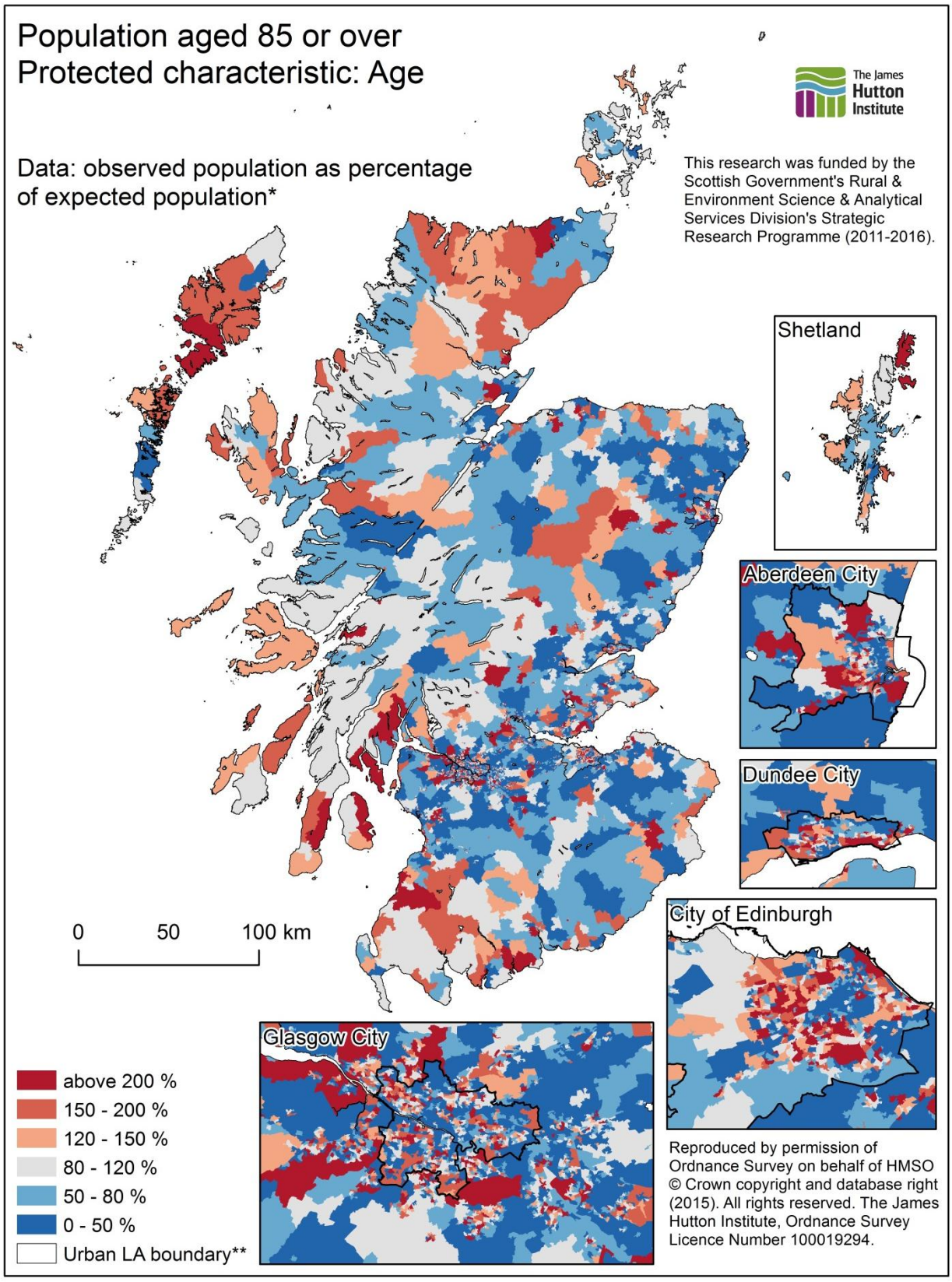
Figure 3: Population aged 65 or over, Scotland.

Population aged 85 or over

The pattern found for a second cohort of older people - the population aged 85 or over in 2011 - is similar to that found in the analysis of the population aged 65 or over. The share of the population aged 85 or over in remote and very remote rural areas and remote and very remote small towns is far higher than that expected (i.e. national average), while it tends to be lower than expected for urban areas and accessible rural areas. This is especially true for remote and very remote small towns, with a population aged 85 or over 49% and 21% respectively higher than expected. Figure 4 clearly shows more spatial variation in data zone-level values than for the 65 or over population described above. Parts of remote small towns where this older population is particularly over-represented include data zone S01007010 (at Huntly in Aberdeenshire), where the population aged 85 or over is more five times that expected. Two remote small town data zones in the North Berwick area (S01008269, S01008270) have more than four times the expected number of residents aged 85 or over. It is possible that the locations of care homes and sheltered housing may influence some of these particularly extreme values.

Table 4: Population aged 85 or over.

Region	Total population	Population aged 85 or over	Population aged 85 or over (% of expected)	% of Scotland population	% of Scotland population aged 85 or over
Very Remote Rural	162,017	3,973	**122.62**	3.06	3.75
Remote Rural	168,013	4,076	**121.31**	3.17	3.85
Accessible Rural	588,757	10,719	**91.04**	11.12	10.12
Very Remote Small Towns	67,549	1,635	**121.03**	1.28	1.54
Remote Small Towns	134,493	4,002	**148.79**	2.54	3.78
Accessible Small Towns	472,352	9,801	**103.75**	8.92	9.25
Other Urban Areas	1,640,430	31,943	**97.37**	30.98	30.16
Large Urban Areas	2,061,792	39,754	**96.41**	38.94	37.54



* Expected population calculated from Data Zone population, and the proportion of Scotland's population aged 85 or over.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

Figure 4: Population aged 85 or over, Scotland.

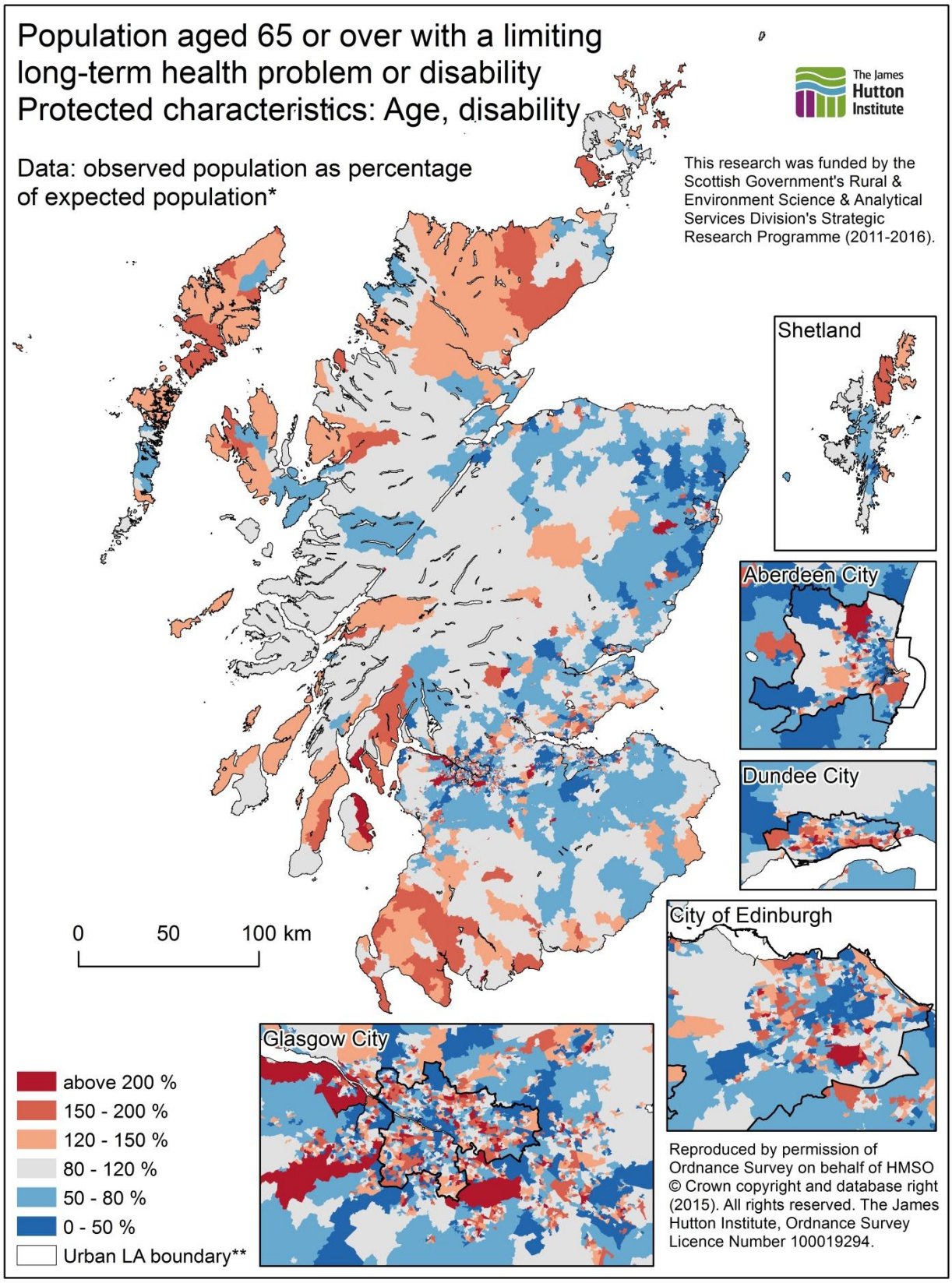
2.2.2 Analysis by age and disability

Population aged 65 or over and with a limiting long-term health problem or disability

Table 5 shows that people aged 65 or over who were affected by a long-term health condition or disability were over-represented in remote and very remote areas, but particularly in remote small towns. By contrast, the share of older people with a long-term health condition or disability was only slightly above expected for accessible small towns and under-represented in accessible rural areas and, although to less extent, in large urban areas. Figure 5 shows a similar spatial pattern to that of the population who were aged 65 or over (Figure 3), with a contrast between a high number of data zones with above-expected numbers of older people with long-term conditions in remote areas, and below-expected populations in more accessible urban and small town areas and urban areas. Similarly to the previous measures for the spatial concentration of older people, table 5 and figure 5 also reveal a 'remoteness effect' in the spatial distribution of older people suffering from limiting long-term health problems or disabilities.

Table 5: Population aged 65 or over and with a limiting long-term health problem or disability.

Region	Total population	Population aged 65 or over with limiting condition/disability	Population aged 65 or over with limiting condition/disability (% of expected)	Population with limiting condition/disability (% of 65 or over population)	% of Scotland population	% of Scotland population aged 65 or over with limiting condition/disability
Very Remote Rural	162,017	16,916	**116.76**	48.04	3.06	3.57
Remote Rural	168,013	16,736	**111.40**	47.78	3.17	3.53
Accessible Rural	588,757	50,062	**95.09**	47.52	11.12	10.57
Very Remote Small Towns	67,549	6,696	**110.86**	51.56	1.28	1.41
Remote Small Towns	134,493	14,931	**124.15**	51.31	2.54	3.15
Accessible Small Towns	472,352	44,278	**104.83**	51.89	8.92	9.35
Other Urban Areas	1,640,430	148,142	**100.99**	54.01	30.98	31.29
Large Urban Areas	2,061,792	175,744	**95.33**	56.14	38.94	37.12



* Expected population calculated from Data Zone population, and the proportion of Scotland's population aged 65 or over and with a limiting long-term health problem or disability.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text. Colour scheme adapted from information at http://colorbrewer2.org/.

Figure 5: Population aged 65 or over with a limiting long-term health problem or disability, Scotland.

Claimants of Attendance Allowance

Attendance Allowance is a benefit which is eligible to individuals aged 65 or over who are disabled and require care[18]. The proportion of claimants of attendance allowance was well above the national average in very remote and remote small towns and very remote rural areas. By contrast, they were below the national average in accessible and remote rural areas, especially in accessible rural areas (only 78% of national average). The proportion of claimants of attendance of allowance was similar to the national average in other urban areas, accessible small towns, and large urban areas. This pattern is illustrated in Figure 6 at the level of data zones.

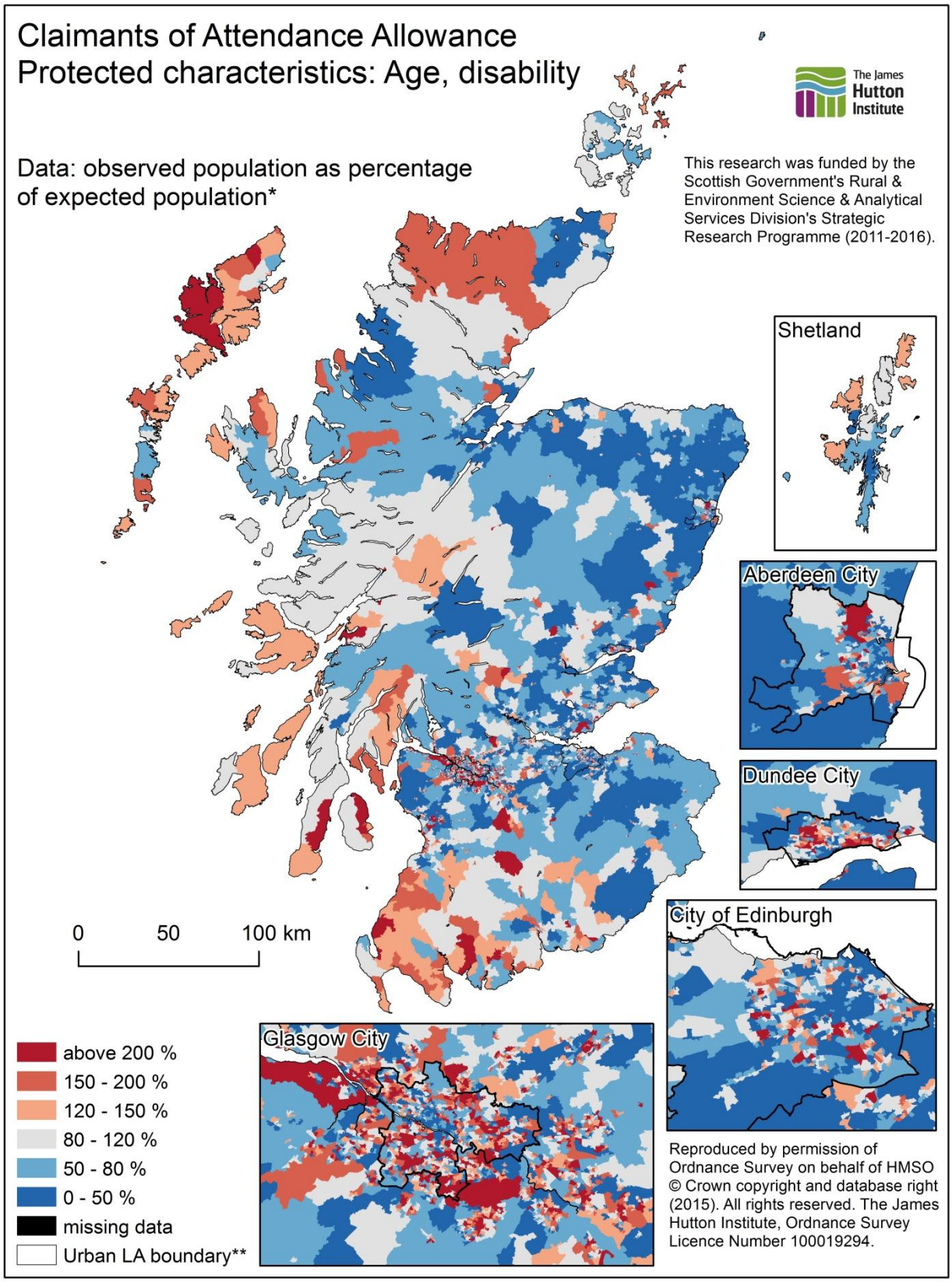
There are some interesting differences between this indicator and the previous indicator (i.e. older people affected by limiting long-term health conditions or disabilities), particularly for accessible rural areas and large urban areas. While the proportion of older people with a limiting long-term health condition or disability is equally under-represented in both accessible rural areas and large urban areas (see Table 5), the proportion of older people claiming attendance allowance is well under-represented in accessible rural areas (only 78% of national average) but slightly over-represented in large urban areas (3% above national average). It is not clear what underlies these differences; reasons can include one or a combination of the following factors: a) differences in income levels, and hence the capacity to cover for disability-related costs, between older people in large urban areas and accessible rural areas, b) differences in the degree of severity of disability, and hence disability-related costs, faced by older people in large urban areas and accessible rural areas, and c) differences in benefit fraud between older people in large urban areas and accessible rural areas. Evidence on residence-based hourly rates of pay for 2014 indicates that median hourly rates are highest for accessible rural areas (£12.42) and smallest for remote rural areas (£11.28), with an intermediate value (£11.55) for the rest of Scotland (i.e. urban areas and small towns)[19]. In addition to this, data from the Scottish Household Survey (SHS) indicates that the percentage of households with lower net annual income levels is largest in large urban areas and smallest in accessible rural areas, while the percentage of households with higher net annual income levels is highest in accessible rural areas and among the lowest in large urban areas[20]. Although these figures do not prove that the disparity in the expected shares of attendance allowance claimants between large urban areas and accessible rural areas results from differences in income levels, they suggest this may a possible, even if partial, explanation. Future research may wish to address this issue more specifically, however such endeavour is not part of the scope of this study.

[18] https://www.gov.uk/attendance-allowance/eligibility (accessed 18th September 2015).
[19] http://www.gov.scot/Publications/2015/03/5411/4 (accessed 8th March 2016).
[20] See page 32 of "Rural Scotland in Focus 2012", available from the link: http://www.sruc.ac.uk/downloads/file/470/rural_scotland_in_focus_2012_web_version (accessed 8th March 2016).

Table 6: Claimants of Attendance Allowance.

Region	Total population	Attendance Allowance claimants*	Attendance Allowance claimants (% of expected)	Attendance Allowance claimants (% of 65 or over population)	% of Scotland population	% of Scotland's Attendance Allowance claimants
Very Remote Rural	160,772	5,290	**110.73**	14.38	3.03	3.35
Remote Rural	182,949	5,090	**93.63**	13.07	3.44	3.22
Accessible Rural	642,653	14,890	**77.97**	12.80	12.09	9.42
Very Remote Small Towns	68,037	2,530	**125.14**	18.74	1.28	1.60
Remote Small Towns	124,252	4,535	**122.83**	15.80	2.34	2.87
Accessible Small Towns	456,662	13,885	**102.33**	15.94	8.59	8.79
Other Urban Areas	1,615,398	48,670	**101.39**	17.14	30.40	30.80
Large Urban Areas	2,062,877	63,155	**103.03**	19.71	38.82	39.96

* Note that the regional numbers of claimants is summed from data zone-level figures for the fourth quarter of 2012 which were rounded from actual values.



* Expected population calculated from Data Zone population, and the proportion of Scotland's population who were claimants of Attendance Allowance.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2001. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Attendance Allowance and population data: downloaded from Scottish Neighbourhood Statistics. Further information on data sources detailed within report text. Colour scheme adapted from information at http://colorbrewer2.org/.

Figure 6: Claimants of Attendance Allowance, Scotland.

2.2.3 Summary of main findings

Figures 7 and 8 provide a summary of the level of over- or under- representation of older people and older people with limiting long-term health conditions or disabilities for each of the areas defined in the SG 8-fold urban-rural classification. On these figures, for each of the eight areas, dots to the right of the vertical grey line show that the indicated protected characteristic was found more frequently than expected in that area.

Figure 7 indicates that remote and very remote rural areas and small towns have a higher than expected concentration of older people, a pattern which is present across all indicators related to age. It is also apparent that older people become more over-represented in progressively more remote rural areas, and that older men are more over-represented in all types of rural areas in comparison to older women. This may be related to the historically higher employment in land based industries (e.g. agriculture) in rural areas, which tend to employ far higher numbers of men than women.

The indicators related to age and disability (Figure 8) show that the spatial concentration of the population who are both older and affected by a disability or a limiting long-term health condition is larger than expected in remote and very remote small towns, and in very remote rural areas. The spatial concentration of older and disabled population is below expected (i.e. national average) in accessible rural areas and large urban areas, but the proportion of older and disabled population claiming attendance allowance is well under-represented in accessible rural areas whilst slightly over-represente din large urban areas. The reasons for this disparity were not addressed in this study, but a simple comparison of median earnings between accessible rural areas and non-rural areas revealed that earnings are higher in accessible rural areas, which could help explain (at least partially) the difference.

Although the above than expected figures of older people and older people with disabilities or limiting long-term health conditions in remote and very remote small towns and rural areas represent considerably smaller absolute numbers of people when compared with large urban areas, the negative effect on the well-being and resilience of communities is likely to be stronger in in the former. These areas are remote and hence face challenges in terms of accessibility to important medical and care facilities.

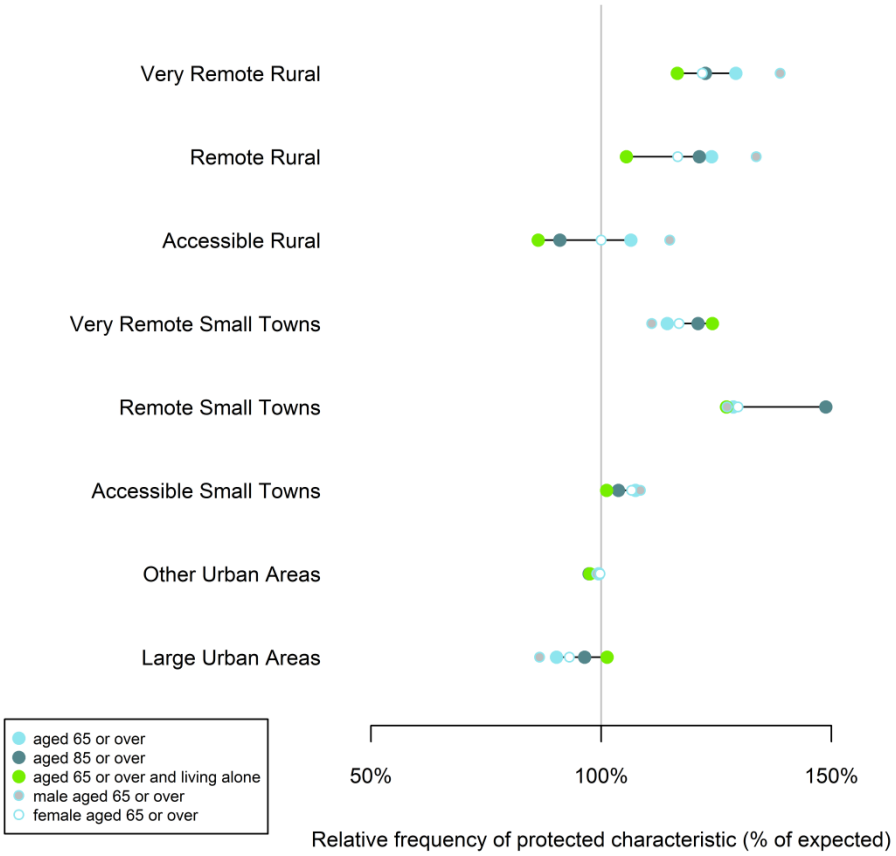


Figure 7: Summary of indicators related to age.

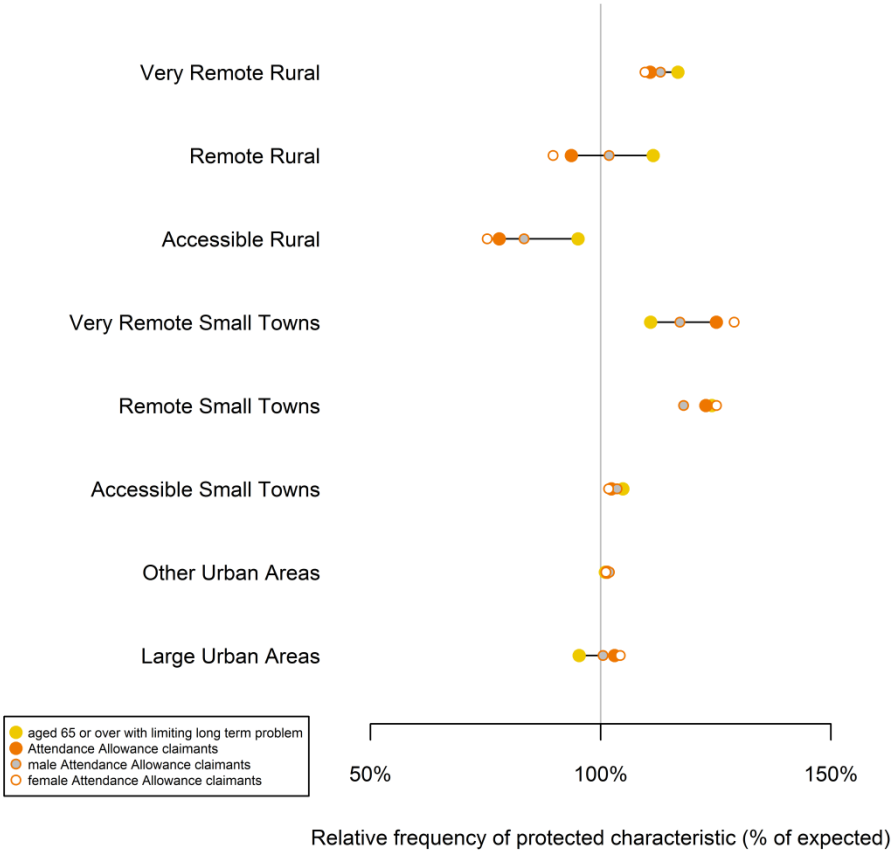


Figure 8: Summary of indicators related to age and disability.

Table 7 shows pairwise correlations between data-zone level populations of older people and protected characteristics related to disabilities. The value of the coefficients of pairwise correlation is high, with values between 0.53-0.71, for the association between older people and limiting long-term conditions or physical disabilities: that is, the areas with high numbers of older people typically also tend to have high populations affected by limiting long-term conditions or physical disabilities. However, the value of the coefficients of pairwise correlation is much smaller for the association between older people and learning disabilities, suggesting a weak co-occurrence of these attribute across data zones. The association between older age and higher rates of disability is expected (Scottish Government, 2014:110); this is because physical and limiting long-term health problems tend develop and appear as people become older. The same relation, however, does not apply to the occurrence of learning disabilities, which explains the largely smaller pairwise correlations.

Table 7: Correlations between data zone-level protected characteristic frequencies.

	Limiting long-term health problem or disability	**Physical disability**	**Learning disability**
Aged 65 or over	0.63	0.59	0.19
Aged 85 or over	0.56	0.53	0.18
Aged 65 or over and living alone	0.71	0.68	0.26

All figures show Spearman's rank correlation coefficient to two decimal places. All correlations are significant at the 99% confidence interval.

Across all indicators, there is a tendency for the frequencies of older people and older people with disabilities to be higher in remote/very remote small towns and rural areas compared to the national average. By contrast, the frequencies of older people and older people with disabilities tend to be smaller than expected or similar to the national average, in urban areas and smaller than expected in accessible rural areas. It is important to acknowledge that these rural areas and small towns have total populations which are very low in comparison with urban areas. Therefore, small absolute numbers of people with protected characteristics, or relatively small counts of protected characteristics, will affect the figures for these regions. However, the higher than expected frequencies of people with protected characteristics in remote areas of Scotland should not be ignored. In particular, the high concentrations of potentially vulnerable older and disabled people in remote and very remote small towns require careful consideration, despite the larger overall numbers of older and disabled people in urban areas. Some remote small towns in the south-west of Scotland were identified by Atterton (2012) as being particularly vulnerable based on an index of demographic and economic indicators, and work in 2015 found that the socio-economic performance of remote small towns was, on average, poorer than that of accessible small towns and rural areas (Copus and Hopkins, 2015). Accessible rural areas, where protected characteristics related to age and disability have been found to be under-represented, also have stronger socio-economic performance compared with remote rural areas and remote/accessible small towns (Copus and Hopkins, 2015): the demographic profile and relative wealth of these areas may be associated with the under-representation of old age and disability.

3. Barriers to outdoor recreation for older people

3.1 Aim and research questions

The case study work carried out in the second stage of the project aimed to investigate the barriers to participation in outdoor recreation experienced by older people in Scotland. Specifically, the research sought to answer the following questions:

- Do participants want to engage more with the outdoors?
- What barriers discourage or prevent them from accessing the outdoors?
- How can we facilitate greater use of the outdoors amongst older people?

3.2 Methods

The research design was developed through a process of co-production between the researchers, colleagues in the Scottish Government's Rural & Environment Science and Analytical Services (RESAS) division, and a wider stakeholder group including Scottish Government policy makers and partners from agencies with interests in landscape and involvement with the natural environment, physical activity and public health. In the first instance the qualitative case study design was devised by the researchers in discussion with RESAS. A qualitative approach was considered appropriate to provide in-depth insight on the full range of barriers experienced by older people. The detailed research design was developed further by the researchers (Currie and Colley) and subsequently refined in discussion with the stakeholder group.

3.2.1 Case study design

A multiple case study design was adopted (Yin, 2003) to ensure that research included participants spanning different types of areas varying in urbanity, with access to a range of different types of green/blue resources (see table 8). The selection of case study sites also took into consideration the need to ensure that the participant sample included a mix of people from different social backgrounds and, where possible, areas were selected to enable researchers to draw on existing community contacts to facilitate recruitment of participants. Each of the three selected case studies were identified as areas where older people were over-represented in the population based on the mapping and spatial analysis carried out in stage 1 of the work and described in section 2 of the report.

Table 8: Case study areas.

Case study area	Green/blue resource	Urban rural classification	No. of participants
Dundee (Baxter Park area)	Urban green	Large urban area	9
Grantown-on-Spey	Rural green	Remote rural area	11
Arbroath	Urban coastal blue	Other urban area	7

3.2.2 Recruitment and participants

In total, twenty-seven participants took part across the three case study sites. The distribution of participants across sites is shown in table 9. Participants ranged in age from 66 to 91 years. Over two-thirds (19) of participants were female. Implications of this gender balance in the sample are discussed in section 3.4. A three-fold approach to recruitment was taken which employed:

1. Visits to community groups and clubs - by researchers, walking around the case study area, speaking to people in cafes, shops and other public places older people went to locally, and speaking to people in these groups where possible.

2. Public notices - Flyers were placed in public places (GP surgeries, post-offices, community centres, local shops, libraries etc.) and a notice placed in the local newspaper.

3. Snowball sampling - Potential participants were suggested or introduced to the researchers through existing and newly-developed contacts in community organisations and/or participants already engaged in the research.

Public notices proved to be an ineffective method for recruiting older people in these communities as no volunteers were recruited via these communications. All of the participants were recruited either through organisations delivering services and activities in the community, or through participants already engaged in the research. Some of these groups were specifically for older people, whereas others were open to all but with a high proportion of members over 65. These organisations included a number of local charities providing lunch clubs and social activities, a church-based craft group and local health walk groups.

A number of inclusion criteria were applied in the selection of participants (see below). Efforts were made to maximise variety in the sample by obtaining as close to a balance in gender as possible, and ensuring that participants ranged in terms of age and physical abilities. Recruitment focused on accessing participants with limited existing engagement in outdoor recreation where possible. Although this was the case for most of the participants, some (e.g. those taking part in health walks groups) were regularly participating in outdoor recreation already yet were included in the sample as they still faced barriers that made their participation difficult or had stories to tell about how they had overcome barriers experienced previously.

Participant inclusion criteria:

- Aged 65 years or over;
- Retired/economically inactive;
- Living independently (not a resident of an institution such as a residential or care home);
- Year-round resident of the study area.

Table 9: Profile of participants.

No.	Interview	Sex	Age
1	Grantown-on-Spey 1	F	68
2	Grantown-on-Spey 2	M	75
3	Grantown-on-Spey 3	F	80
4	Grantown-on-Spey 4a	F	73
5	Grantown-on-Spey 4b	F	77
6	Grantown-on-Spey 4c	F	69
7	Grantown-on-Spey 4d	F	86
8	Grantown-on-Spey 4e	F	>65
9	Grantown-on-Spey 4f	F	>65
10	Grantown-on-Spey 5	M	73
11	Grantown-on-Spey 6	M	77
12	Arbroath 1	F	75
13	Arbroath 2	M	68
14	Arbroath 3	F	78
15	Arbroath 4	F	81
16	Arbroath 5	M	84
17	Arbroath 6a	F	90
18	Arbroath 6b	F	77
19	Dundee 1	F	66
20	Dundee 2	M	67
21	Dundee 3a	F	72
22	Dundee 3b	M	79
23	Dundee 4	F	77
24	Dundee 5	M	81
25	Dundee 6	F	76
26	Dundee 7	F	73
27	Dundee 8	F	91

3.2.3 Data collection and ethics

Data were collected through semi-structured interviews, and in one case through a small focus group in Grantown-on-Spey, where the group was unwilling to speak on their own to the researcher. The majority of interviews took place either in the participant's home, in an appropriate public place (e.g. local café), or *in situ* at the premises of community organisations where recruitment had taken place. Two interviews in Grantown-on-Spey were conducted by telephone, as a result of participants being ill and unable to attend the originally scheduled interview time. The interviews lasted between 12 minutes and 1 hour 3 mins, with most lasting 20-55 minutes. All sessions were audio-recorded, with consent, and transcribed for analysis. Participants were provided with an information sheet on the project in advance of the interview (see Appendix C). Prior to commencing the interview, the researcher again outlined the purpose of the study, what the interview would entail, how the data would be treated, and the participant's rights regarding their consent to participate. The interview schedule is provided in Appendix D of this report. Written informed consent was obtained (see Appendix E). Ethical approval for the project was granted by The James Hutton Institute Research Ethics Committee prior to data collection commencing.

3.3 Findings

3.3.1 Current engagement in outdoor recreation

Outdoor recreation vs. being active out-of-doors

Exploring participants' current levels of engagement proved more complex than initially expected as it became clear that different participants interpreted 'outdoor recreation' or 'getting into the outdoors for recreation' in different ways. This was largely because of different notions of 'the outdoors'. Not all participants recognised a distinction between being in a built-up area versus a natural environment or saw it as relevant. Similarly, the distinction between recreation/leisure activities and other activities (such as walking to get to a destination) was not always clear to participants. For example, many participants talked about walking for active travel (e.g. walking to the bus stop, social clubs or local shops and supermarkets) or walking in built-up areas for more leisurely purposes. The latter included shopping/window-shopping or "taking a wee dander" around the local town centre or in other towns visited by car or bus on day trips. These activities were seen as a good way to incorporate physical activity into the daily routine:

Well I try to do as much walking as I can but nae walking as such but shopping. Like I won't take the bus into the nearest shop and go there, I will walk. I'll walk from the town as far [as]Tesco's and back up and its quite a bit to walk... ....because they say do half an hour in the house, half an hour in the house is a hell of a long time in the house I can tell you that!..... I go around that table till I'm blue in the face and I've only done 5 minutes! (A6a-F-90)

Others talked about walking in natural environments but for instrumental reasons rather than for enjoyment. For example, one participant only did so for the sake of walking her dog and letting it run around in an open space:

I need a reason and the reason I go for walks is because my doggie needs out for a walk! If he did'nae need out for a walk I would'nae be going out for a walk! But I'm honest about it, you get these people that say oh no I would do that anyway and I'm thinking I would'nae do nothing if I got away with it. (D6-F-76)

Similarly, many participants talked about gardening which, although for some was seen as a form of outdoor recreation, was viewed by others more as a household chore that needed to be done but which offered little or no enjoyment other than the satisfaction of 'getting on top of things'.

A few participants took a view of outdoor recreation that included any recreational activities that took place outside their home, discussing their participation in craft groups, country dancing, lunch clubs or travelling by car to visit friends' homes. These individuals placed great importance on simply getting out of the home and interacting with other people. For one participant, the idea of taking part in outdoor recreation was of little relevance compared to her need to connect with others, which might be better achieved in the built environment:

...there's nobody in Baxter Park that you can turn around and say...you can go down the town, I can go down the town and sit on a bench. Sometimes people will speak to you and sometimes they don't. I mean I'm not the only one that's lonely... ... I like sitting in the square because people are in the square you know? (D8-F-91)

Two participants from Arbroath were members of a self-organised 'disabled ramblers group' in which the members take day trips in summer to visit destinations including parks and coastal towns on mobility scooters transported by trailer. These individuals thoughts and opinions were included in the analysis as it was clear that their motorised activity was allowing them to access the outdoors for recreational purposes.

Finally, for several participants in Grantown-on-Spey, the boundary between built environments and the 'outdoors' was further blurred by the characteristics of the rural setting. These individuals felt they automatically get the experience of being in the outdoors simply by stepping outside the house, even in the centre of the village:

...because in Grantown-on-Spey here, even if you're just walking up the High Street, you're not exactly in the town are you! ... You're virtually still in the countryside even on the High Street aren't you? (G3-F-80)

The examples highlight that outdoor recreation is not a clear cut concept, and that the definitions of outdoor recreation used in policy and practice may not necessarily concur with the interpretations and meanings of outdoor recreation held by the older generation. These meanings may depend on what is most salient to the individual for their wellbeing, for example emphasising outcomes of getting sufficient physical activity and social contact rather than being active in the 'great outdoors'.

Participants' engagement in outdoor recreation

From the perspective of outdoor recreation as (non-motorised) leisure activities taking place in largely natural environments such as greenspace, beaches and the coast, woodlands etc., participants were mixed in terms of their levels of engagement. Several reported participation on at least a weekly basis, whilst several reported no engagement at all, with others falling somewhere between these two ends of the spectrum. Amongst those who reported some level of participation, the intensity and duration of activity also varied considerably, with some of the more frequent walkers walking at a gentle pace for relatively short periods of time, and some of the those who participate less regularly doing much longer walks or more challenging walks, for example on a monthly basis. Overall, levels of engagement were highest amongst the Grantown-on-Spey participants. It should be noted that five of the 11 Grantown-on-Spey participants were involved in organised walking groups (though only two were recruited via a group). This is compared to two walking group attendees in Arbroath and three in Dundee. It is therefore difficult to attribute any differences in overall levels of participation between the case studies to particular factors. Notably, the majority of participants reporting participation in outdoor recreation on at least a weekly basis attended an organised walking group or club.

Walking (including with dogs) was by far the most commonly reported activity across the three study areas. Gardening was the next most popular activity, reported mainly by participants in Grantown-on-Spey and Arbroath. Only participants in Grantown-on-Spey reported other types of outdoor recreation activity which included skiing, golfing, running and cycling. With the

exception of cycling (reported by one female participant) these other activities were performed by two particularly active male participants in their mid-late seventies.

Although many participants reported walking alone when in town or when going about everyday business such as going for a bus, visiting the local shop etc., most instances of outdoor recreation were described as occurring in the company of others. In addition to those who did most, or all, of their walking with organised groups, others tended to report walking with spouses, friends, or (less often) other family members. A few participants, however, reported tending to walk on their own out of a preference for their own company. Skiing and golfing were usually done in company, although the male runner went alone.

Of those participants who reported taking part in outdoor recreation, most walked in their immediate local area or in other familiar places in the wider area easily accessible by bus or car. Some participants also reported outdoor recreation as part of holidays elsewhere in Scotland or the UK, or in one case in Europe. These trips included walking weekends with friends, and holidays away in a caravan or motorhome which included walks in the countryside or in historic designed gardens. For the most part, however, the most common settings for walking were familiar local places. Familiar settings may be particularly important for those who are less confident, and because knowledge about the availability of facilities such as toilets or benches can become increasingly important in older age:

Participant: Its Baxter Park as far as I'm concerned, Baxter Park is the best.

Researcher: And why is that?

P: I don't know about the toilet facilities in other parks... When you get to this age you're always looking for toilet facilities! [Laughter]

R: So you know what you're getting then with Baxter Park?

P: Yeah I know what I'm getting with Baxter Park yeah. (D2-M-67)

The types of environments used for outdoor recreation varied between case study areas. As expected, participants in Dundee most often mentioned walking in urban greenspace. Baxter Park was the closest greenspace to home for most of those in the Dundee site, and was discussed most often. Other parks were also mentioned, including Camperdown Country Park, as well as blue spaces such as the Dighty Burn and Swannie Pond. Amongst Arbroath residents the most commonly reported settings were Victoria Park (situated on the waterfront) and along the sea front including the harbour area. Grantown-on-Spey participants' outdoor recreation settings focused on the Anagach community woodland and River Spey in the immediate vicinity of Grantown-on-Spey, along with other walking routes in the foothills of the Cairngorms. Visits further afield to (other) coastal towns and beaches were mentioned by participants in all three study areas, but particularly those from Arbroath and Dundee.

Satisfaction with current level of participation

Across the case study areas there was a tendency for participants to report satisfaction, acceptance or resignation with respect to their participation in outdoor recreation (or lack of it). Very few expressed dissatisfaction, though some who were constrained by health and mobility issues reported that they would do more if they could. One participant voiced frustration that

she could not manage more, however others felt either that that there was no alternative but to accept the situation, or that on the balance of things they are still happy with their lot. Those who were already engaging in outdoor recreation on a regular basis tended to report feeling satisfied with what they did. Several of those who reported never engaging in outdoor recreation had no interest in taking up any outdoor activities. Some participants accepted no longer being able to get outdoors in the same way as they once did. There was a sense that their expectations and aspirations had narrowed in their older age:

Nah nah nah, not now, not nowadays, not at my age!… basically when you get to my age and my stage it's a case of just day-to-day, and if you waken in the morning that's a bonus... ...Well if anybody says to you any different they're telling you lies because to me, you're getting to the stage now where you're wearing down the way... I mean I've had my life! (D5-M-81).

I'm quite happy with the way things are you know? I'm not...obviously I'd love to be able to go bloody hill climbing, and hill walking and things like that but that's not...just not possible so... (A2-M-68)

For others, their lack of interest in outdoor recreation was simply a case of preference. These participants tended to talk about indoor leisure activities that they preferred. These included active pursuits like indoor bowling, dancing, zumba and other fitness classes as well as more sedentary activities like reading, dominoes, and crafts.

3.3.2 Barriers to participation in outdoor recreation

Understanding the barriers that prevent older people engaging with outdoor access is important in considering responses as to how these could be overcome. The interview schedules specifically sought to ask questions on certain barriers that may be perceived as hindering outdoor access to older people. These include:

- Poor health and (im)mobility;
- Lack of or reduced social relationships and isolation;
- Being generally busy and having other commitments;
- Safety;
- Weather and season;
- Appropriateness and accessibility of outdoor spaces to older adults.

However other themes arose during the interviews and subsequent analysis including:

- An individual's self-perceived fragility and vulnerability;
- Individual's motivation and negative attitudes to being in the outdoors;
- Gender;

- Place.

The paragraphs below address some of the main barriers relating to: health and mobility; fragility and vulnerability; social barriers; motivation and negative attitudes; other commitments; safety; access to outdoor spaces; and weather and season.

Health and Mobility

Many of the participants stated that they had (a) medical condition(s) that limited what they were able to do. Chronic problems faced by the older people who were interviewed included: joints being replaced (hips and knees); broken bones; asthma; bronchiectasis; chest problems; osteoporosis; kidney problems; arthritis; high blood pressure; localised paralysis; and cancer. Some participants were faced with multiple health conditions that limited their ability to participate in outdoor activity. e.g.:

I've got a bad heart, and I've got a bad leg as well, but I've got a bad heart – I've got a defibrillator... (D5-M-81)

Older people are more likely to have multiple lifelong conditions than younger people and trying to think of solutions to overcome these may be more challenging. Participants also commented that there was pain associated with their condition(s):

Not when I'm walking. I do get discomfort at times, but sometimes it's...it could be in my bed, just the way I turn or...eh ... I don't know what, you know, causes it, but it's not just my ankle, it's maybe up the back of my leg... I think the tendons have a lot to do with it – you know, things like that. But on the whole, I'm fine, and I'm able to get out and about, so that's the main thing (D7-F-73)

Some of the participants also noted temporary health barriers which made it difficult for them to access the outdoors for a set period of time. Examples given included: broken bones and ligament injuries, chest infections, shingles, panic attacks and sciatica. Regarding her shingles, this participant stated:

Now I'm fine. But, at the time, it absolutely flattened me. I couldn't go walking. I'd start off and have to come back, you know. Just totally exhausted me. (D1-F-66)

Health and mobility problems can also affect how much an individual can do when they do get outside, for example one participant noted that with his health condition it took longer to do the same thing he did before and he felt that he had less energy to do it. Such health problems can affect an individual's mobility, which will play a big role in allowing older people to get into the outdoors:

And it's come back to haunt me so...uh...I can't breathe very well. I run out of breath very quickly so if I'm outside especially around this area I use a scooter to get around. (A2-M-68)

Physically you think oh gosh my legs are tired. You just need to sit down for a minute. Well I do. (G4-F-focus group)

It was also found that other peoples' health, generally those the participant lived with or who were common outdoor companions could also affect how much the person was able to get outside. As well as going with others to use the outdoors (covered in the social barriers section below), participants also stated that they were given advice by others about their use of the outdoors and the amount of exercise they should be doing. This could be both a positive and negative influence. Negatively, one participant was told that she should stop doing something that he perceived to be too strenuous for her. Positively, one participant stated that his wife had encouraged him to be more active:

A bit of both, like I say a lack of motivation, my wife is always shouting at me, go and do something! Yes dear! (D2-M-67)

When asked, a few participants stated that they would do more outdoor activities if it was "prescribed" by their doctor. Doctors are people in a position of authority and trust, and it is possible that people may feel that they should follow their advice over the advice given to them by their peers. People may also feel that a doctor's advice is appropriate for their specific health needs. One participant, who had joined a walking group, described their doctor's positive reaction to her going on a walking group:

Yeah because I've got really high blood pressure to the point of...being admitted to Ninewells... 'Cause of this panic attack thing, you know. So starting the walking group, he was like 'That's great, just keep going on that till'... And yeah, it's come down remarkably... (D1-F-66)

Some people had stopped doing activities that they once enjoyed due to ill-health. One example was given of a man who had given up bowling due to his bad knees, and someone else had given up bowling due to a tremor in his hand. Others had tried new activities when they no longer felt able to do more strenuous activities, however new endeavours were not always successful:

Participant 1: "I took it up when I was too old to play anything else. I gave it up very quickly the ball was too small. The stick is too small and the hole is quite definitely too small.

Researcher: You're talking about golf?

Participant 1: The whole thing is too slow.

Participant 2: It's a good walk spoilt really for me!

Participant 3: I'd rather go and walk around the golf course and look at the birds." (G4-F- focus group)

Fragility and Vulnerability

It was found that participants began to feel more frail and vulnerable as they aged and this had a direct impact on their willingness to go outside. A very common theme within this barrier was a fear of falling. Some participants had direct experience of falling e.g.

I'm very cautious because I did fall in the woods years ago and...and I broke my arm so...I do...look where I'm going! (G1-F-68)

I would have to have someone there just in case because I once fell that was a few years ago and I was stuck down there and I could'nae get up until a man came along with his dog and I guarantee it was three-quarters of an hour I tried to get up. I had nothing to hold onto. (A6a-F-90)

As the latter quote suggests, this means that many of the participants were worried to go into the outdoors by themselves. For some this was because they worried that if the fell they wouldn't be able to get up; one example from Dundee was given of a man who could no longer kneel so didn't know how he would get back up. Some participants stated that because they were afraid to fall, they did not go out alone, whilst others stated that they took precautions in an attempt to stop them from falling e.g. wearing suitable footwear, and a taking phone with them when they went out. However, it was noted that mobile signals were not always reliable in some outdoor areas, particularly in Grantown-on-Spey.

People were also worried about falling because it could affect their own future and independence as well as others that they lived with and in their families. There were also a few comments that seemed to relate to older people becoming aware of their age and their increasing limitations, meaning that they became (relatively) more cautious as a result:

Just incrementally you get a little more cautious so it's just age and it's not that you're...you haven't quite started dying apart from the fact you're dying once you're alive! But incrementally you take less and less risks and you think more carefully about dashing out if you can only see 10 yards and there's ice. (G6-M-77)

Other fears that people had of going into the outdoors for recreational purposes included: fear of catching a cold/getting ill; the risk of losing their independence if they were to fall; and a general loss of confidence as people get older and their social circles decrease. As participants lost confidence, or had a bad experience that shaped this loss of confidence it appeared that they perceived themselves to be more frail and consequently trips into the outdoors were associated more with being "risky".

Social barriers

It was found that a social environment can both stimulate and deter outdoor activity. Many participants in Dundee and Arbroath stated that they did not like to go out by themselves:

Well I don't like going out walking myself. There is walking groups but…and they've had a walking group for years but I've never went there because my legs won't take me...(A3-F-78)

Participant: You feel embarrassed.

Researcher: Embarrassed on your own?

Participant: Yes!

Researcher: Why is that?

F: I don't know what's wrong with me but I don't like going any place on my own. (D8-F-91)

No-one in Grantown-on-Spey said they were deterred to go outside by themselves. This may be related to other statements about always being able to bump into someone they knew when they were out, so the opportunity to have a social interaction when going out by themselves was almost guaranteed.

Participants discussed not getting into the outdoors or getting into the outdoors less than they used. This was because they had lost the companionship of someone to go with, specifically losing a spouse, a friend or someone in the same household to go out with, or friends moving away. This was similar across the different case study areas. One person discussed that people needed to be accommodating to others' needs to encourage them to go e.g. walking at the same pace.

It's not the same... Since my husband died, well I did a lot of walking and cycling and that with him, but it's not the same just going out yourself... (A3-F-78)

Participants specifically mentioned liking to go to places where other people are; finding people with similar interests to go out with; and preferring to go out with people they already know. However not everyone wanted to go out with others and there were participants who explicitly stated that they liked going into the outdoors alone. Some participants specifically mentioned preferring to go walking with people who are quiet so they are able to appreciate nature that may otherwise be scared away by talking and noise.

Gender was also mentioned as a potential barrier. However these views predominantly related to participation in a walking group and as such are addressed in section 3.3.4 which discusses attitudes towards interventions.

Lack of motivation and negative attitudes

One participant stated that it "felt pointless" going for a walk with no purpose at the end of it and associated being in the outdoors with being sporty:

And I hate sport, I hated sport when I was at school and I've hated sport ever since, there was absolutely no way I'm going to go and do sports. (A1-F-75).

There was mention by participants of not being bothered to go out, but of these participants there were some who were encouraged to go out by other people e.g. spouses. Others felt that it was important to be self-motivated:

If I don't make an effort I'm stuck here! It's up to yourself to move. (A6b-F-77)

Dogs also appear to motivate participants to getting out more:

Not so much around the way here because we're usually away but... ...put down once a month maybe for... ... And we don't...haven't got a dog now so he doesn't take us out… well it was maybe six miles a day... And it was...it's a mile up to the top of the woods and a mile back, and we would do that maybe three times a day... (A5-M-84)

I'm lazy! Yeah he's my incentive but I'm lazy and I know I'm lazy …[later in the interview]… I need a reason and the reason I go for walks is because my doggie needs out for a walk! If he did'nae need out for a walk I would'nae be going out for a walk! But I'm honest about it, you get these people that say oh no I would do that anyway and I'm thinking I would'nae do nothing if I got away [with it] (D6-F-76)

The quotes of these interviewees highlight the importance of dogs getting people into the outdoors. In this study we found that relatively few of those interviewed had dogs. It is therefore possible that this study underestimates the importance of dogs for motivating their owners and others who walk them to get into the outdoors for recreational purposes. It should also be noted that this research was framed around barriers rather than motivators to outdoor recreation; it is therefore possible that although dog ownership is associated with greater participation, not owning a dog is not something which participants consciously considered to be a barrier to their engagement.

Other time commitments

Older people in the study described themselves as having busy lives which acted as a barrier for them to get into the outdoors. Reasons for this included:

- Volunteering and other community work;
- Taking care of their home and garden;
- Being too busy doing other things;
- Having caring responsibilities.

I think the biggest problem is I might get through a day if there was an extra 2 hours in the morning, and an extra 2 hours somewhere between 4 and 6 o'clock. I might eventually achieve everything in one day that I meant to! I just find there's not enough time. (G4-focus group)

Well that's what I say today I've been for coffee, collected my grandson from the school, had lunch with him, took him back, come here, and then I've got country dancing after tea! (A6b-F-77)

Once she goes back to work we'll be babysitting again! And it certainly restricts you and we tend not to go away uh...if my son-in-law is here because he works on the rigs so he's away for a fortnight or 3 weeks at a time so rather than leave my daughter on her own we do the pick-ups (D2-M-67)

Noting that he had a busy life, this person deliberately put time aside to get into the outdoors:

Well I just need to organise my life differently so that...you know, having a walk you know, or a cycle is higher up the priority list (G5-M-73)

These findings are important in that they challenge the perception that older people have lots of free time and therefore that time would not be a barrier to their participation in outdoor recreation. Many of the older people that we interviewed perceived themselves to be as busy as they had been at other stages of their lives.

Safety

The interviews revealed that the majority of participants were not scared of being in the outdoors. However, two types of safety fears were brought up by participants: (1) fear of being attacked by people and dogs, and (2) fear of falling and no-one being able to help. Two women interviewed had been attacked in the past, both within the last two years. One in Dundee had been chased in a graveyard (D1), and the other had been flashed in Arbroath (A6). Safety was a more apparent concern for these women than other participants and acted as a barrier to their current engagement in the outdoors. Neither were willing to be in the outdoors alone as illustrated by the following comment:

Yes uhuh, and... ... But I run...I mean I could...quite good runner, you know, and I ran and jumped over the wall and... And my... But after that I really started to... After! You know, I had to think back what happened, you know, 'cause the doctor asked what happened ... But my friend son's a policeman, and he'd said 'Why didn't you phone us and just...tell us?', you know – it could have been totally... ...simple! explanation like, you know ... Because there had been people attacked in the cemetery, you know...(D1-F-66)

Examples were given by participants of people choosing to avoid certain areas and places, however, this was only in Arbroath and Dundee but not Grantown-on-Spey.

But when I go out to St Vigeans, I take a specific route, and I take the same route back. Because, the route that we take from the Town Mission where you go by this dam, it's a bit uncertain – you know, it's kind of solitary, and I don't feel safe going on my own...(A1-F-75)

It was also found that participants were warned by others to avoid certain places:

Well the darkness doesn't put me off, it's just that you hear that many stories and things like that...you know, like, muggings and things like that, you just get frightened to go on your own...(A3-F-78)

Some participants mentioned not going to places alone and feeling safer during the day. With one exception, all of those that noted feeling safer during the day were female, suggesting that the females in the study faced a greater barrier in terms of fear of being attacked than the men. Three Grantown-on-Spey respondents specifically said that they felt safer in Grantown-on-Spey than in other areas they had lived. There was also some discussion around familiar places feeling safer and knowing what to expect.

One person expressed a fear of dogs and not knowing where they might be:

Yes the only thing that's unsafe are dogs because the dogs go out and when you're out they're let off lead and you don't know what's lurking around the next corner. (G2-M-75)

Access to outdoor spaces

Needing to take a car to access the outdoor spaces that they wanted to go to was mentioned as a barrier. A number of participants stated that they liked getting into the outdoors but were reliant on friends and family with cars to take them there, therefore the availability of transport to access outdoor spaces may act as a barrier.

I try and get there but um...it's only if I've got somebody that can put the scooter in the car for me (A2-M-68)

Well one chap had a crash and is not allowed to drive now and he lives [further away] so we've got an arrangement that somebody will try and pick him up to take him to the walks. (G2-M-75)

I don't walk as much as I used to because I can't drive so...and my husband is not interested anymore so I don't go for long walks like I used to...(G4-focus group)

Others stated that they used buses and taxis or relied on walking groups with their own transport who are able to collect them in suitable vehicles. The disabled ramblers group in Arbroath, for example, was able to transport wheelchairs and mobility scooters too. Additional ways in which the participants were prevented from getting to preferred outdoor areas included: financial constraints, lack of suitable paths, and the distance between preferred spaces and home. One participant said a fence had been put up to deter access to one space; whilst two participants in Dundee stated local bowling greens had closed down. The issue of paths acting as a barrier also arose. Specifically mentioned concerns included: uneven ground, tree roots (particularly in Grantown-on-Spey – mentioned by all but one participant), mud, being overgrown. Two participants mentioned that they only liked going somewhere if there was a presence of local facilities such as toilets, benches and cafés.

With regards to the perceived quality of outdoor spaces for their personal use, two participants said they did not want to use areas that were *"boring"* or *"not very interesting"* (although participant was not talking about her local area). Other issues that affected the quality of spaces included: dirty environments including dog fouling, and those perceived to be unsafe. One person found it hard to found an appropriate outdoor space to exercise his dog.

Weather and Season

Bad weather generally appeared to put participants off wanting to go into the outdoor:

I can get out more, I just...don't, especially not in this weather! (D1-F-66)

Oh no I mean I say I still ski, but...um...as I said I might go up a dozen times to Cairngorm but there's only 6 or 7 that might be appropriate to ski, you might have one run and think oh dear its icy in there and you can't see, or there are 50 mile an hour winds and although I did ski in those conditions when I was younger it's a bit foolish to think of

doing that now so health and weather start limiting your...the range of your activities. (G5-M-73)

Nearly all participants stated that there was some aspect of poor weather that put them off accessing the outdoors and there were participants who stated that:

- They will only go out in dry weather/when it is a nice day;
- Wind puts them off;
- Rain puts them off;
- They did not like the cold (and some specifically disliked ice).

One reason that weather acted as a barrier to the outdoors was because it was felt to aggravate particular health conditions:

From here on till about April it's pretty much out yeah because...I went to the Remembrance Parade last week and that's what's caused my chest problem at the moment. (A2-M-68)

And then I mean I've got...I go to the COPD ... And eh...well that week...last week I had this chest infection, so I couldn't get out... And it was cold in the wind, and if the wind catches you... (A3-F-78)

However a small number of participants stated that the weather does not affect how they use the outdoors.

I mean I think obviously in the summer, if it's a nice day, the attraction of going out is greater... But ehm, no we'll go out most times, even when there's ice and snow around (G5-M-73)

Several participants stated that they get out more during the summer and mainly attribute this to better weather and more light in the evenings. Some participants who were in walking groups stated that these were restricted in winter months.

Multiple barriers

From the results it is evident that this research has identified a number of barriers that deter older people from getting into the outdoors. For the majority of participants interviewed there are multiple barriers acting together which prevent older people from accessing the outdoors. Multiple barriers may require more complex solutions than individual barriers alone. If only one barrier is addressed it is unlikely to provide a suitable solution as it may only tackle part of the problem. Thus, understanding that barriers do not act in isolation from each other is important. For example, an individual might have a long-term health condition meaning they are less steady on their feet, increasing their fear of falling and limiting the availability of suitable paths, decreasing their confidence and making them not want to go into the outdoors alone. Providing only a suitable path may not overcome the complex interaction of barriers faced by this individual but providing someone to go out with the person on the suitable path may be a more suitable solution. When examining the different barriers identified above, the researchers also

considered the interconnections between multiple barriers. These linkages have been conceptualised in Figure 9 below. This highlights, again, the idea that for many older people there are multiple barriers that may work together to exclude them from being able to access and use the outdoors.

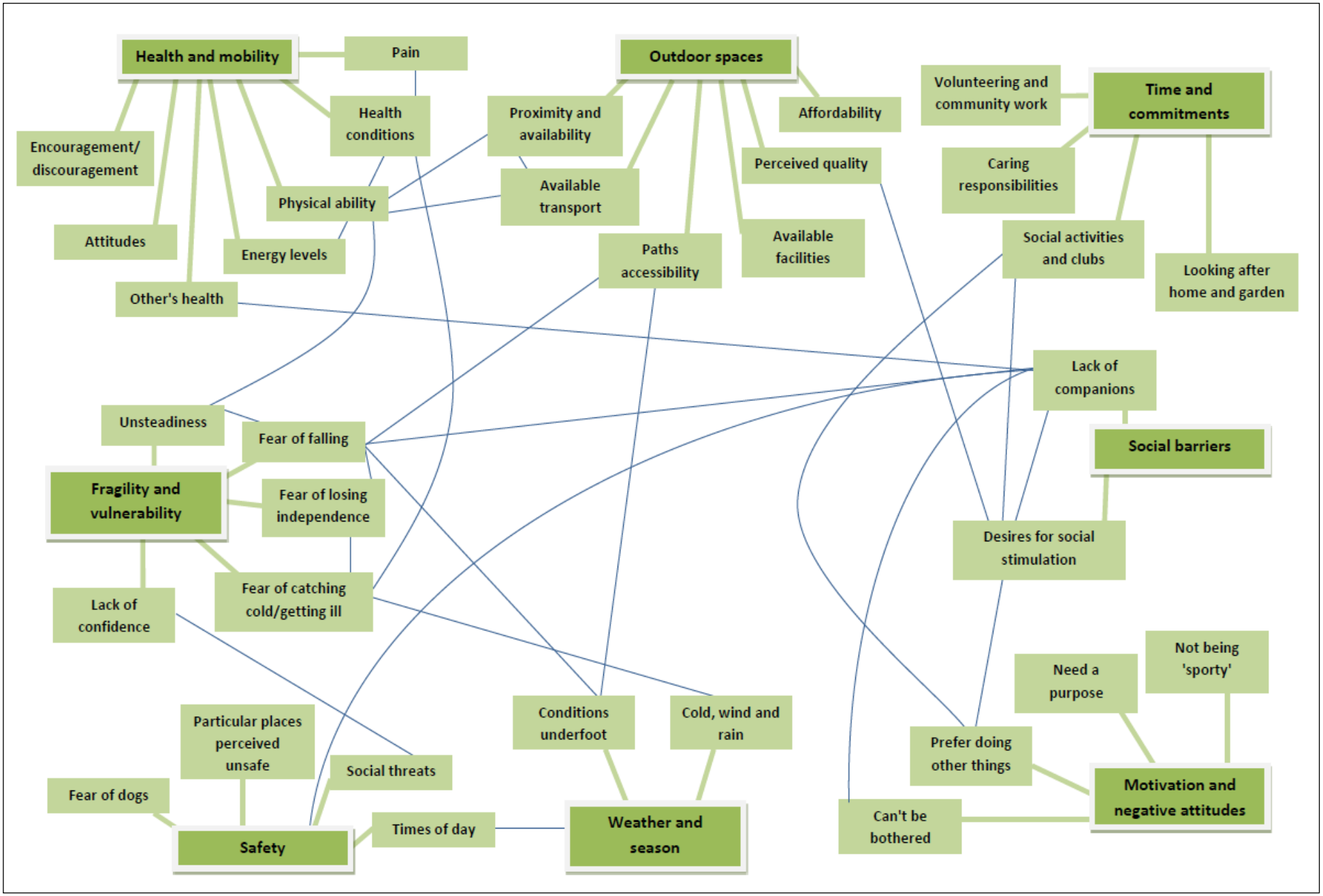


Figure 9: Key interconnections between barriers to participation in outdoor recreation experienced by older people.

3.3.3 Moments of change

In addition to asking participants about the current barriers that constrain engagement in outdoor recreation, we also explored with them their participation in outdoor recreation at different points in their life course. This life history approach allowed us to investigate how participation had changed (or not) for them during different stages of their life and the key 'moments of change' where the extent or form of their engagement with the outdoors had shifted considerably. The most central moments of change with respect to outdoor recreation engagement were:

- Getting married and/or having children;
- Children growing into teenagers;
- Moving to a new area;
- Retirement;
- The onset of health problems;
- Spouses or friends passing away;
- Dogs passing away.

These moments of change are discussed below, structured according to the life stage at which they were most often reported to occur.

Outdoor experiences as a child and young adult

Participants described a variety of outdoor activities they engaged in as a child. These ranged from activities with parents and family (such as walks locally on a Sunday, hill-walking or even sailing), to competitive sports (e.g. rugby, hockey, netball, putting, running and cycling), activities with organised youth groups like the Scouts, and unstructured outdoor play in the woods, on bikes or climbing rocks in a nearby quarry. These activities were dependent on the type of area in which participants grew up. Those who talked about growing up in the city focused on outdoor play in the streets:

> **No we never thought about parks. You played out in the street and you were happy go lucky. That was you, you were fine! Nah! Nah! (D8-F-91)**

This same participant described herself as never having really been engaged in outdoor recreation activities in outdoor spaces throughout her life. When asked why, she talked of the female role models she had while growing up:

> **I never saw my mother doing anything. Never seen my mother going anywhere, or nothing. No! Never seem my mother.. my gran or... as I said I didn't know my mum until I was about 12 or 13 but my gran she never... we used to go out to play, we were kids out to play. (D8-F-91)**

As mentioned previously, a few of the female participants associated outdoor recreation with sports and commented on how they had never been 'sporty', almost as if this was an aspect of their identity which had been set from their youth.

Marriage and family life

The first major moment of change described by participants was the stage at which they got married and/or started a family. Many talked about these two rites of passage in conjunction so we discuss them here together. A small number of participants reported taking up new activities on getting married - either adopting their new spouse's existing hobbies like walking or cycling, or starting new activities like caravanning together. However, many more participants described giving up activities and sports that they engaged in as a teenager and young adult. For example, one participant stated:

Right at school I used to be the hockey captain.. And I ran for Dundee.. And I did netball… And then you get married…, you have kids… You know! And your life changes into something else. Yeah. Yeah I always used to be really active, you know? (D1-F-66)

The reasons for this were varied - whether it was to switch to a different outdoor activity that their new spouse also enjoyed, because it was difficult to fit these activities in whilst caring for young children, or simply that individual pursuits went by the wayside to be replaced by activities for the whole family to enjoy. However, although a number of participants reported giving up activities at this stage, these were usually replaced with other (perhaps less vigorous) types of outdoor recreation. Outdoor recreation as a parent of young children was described in terms of trips to the seaside, games and picnics in parks, walks along local canal and rivers, holidays and day trips in the countryside. For some participants the time when their children were young represented the period of their lives when they spent most time in the outdoors:

But, ehm...apart from that, you know, I would take...when my child was...first child was about a year old, and I lived in Monifieth, in the summer we'd go down to the beach every day... And, you know, just put things in her pushchair – picnic – and we went every single good day there was... She lived at the beach! (A1-F-75)

Getting married and having children represented a key moment of change for both male and female participants. There were, however, some differences in the types of outdoor recreation with young children recalled by men and women. Though both mothers and fathers talked about trips to the park and to the beach, fathers were somewhat more likely to mention daytrips and holidays away, whereas the mothers tended to talk more of everyday use of local green or blue space. These differences may reflect traditional divisions of labour at the time when these participants had a young family. One female participant hinted that part of the reason for outdoor recreation at this stage was to cope with the demands of having young children at home and let them use up some energy:

You've got a child you said? Well you either murder them or you take them out, rain or no, don't you?! (G3-F-80)

The next moment of change, described by many participants, was the point at which children grew older and started to become less interested in outdoor activities with the family, preferring

to spend time with their friends instead. One participant described how she became less active when her kids grew older:

You went out and you did things with the kids, and yeah you were active. I was really active while my kids were young... ...Once they left school there was'nae the same incentive to go and do things. I don't know if everybody is like that but that was me. (D6-F-76)

Another participant also linked this phase with a wider change in her lifestyle when her children left home. It should be noted that, unlike when activities in youth were replaced with family outdoor activities, there were no mentions of participants taking up new activities, or even continuing the same activities without the children, when family outings fizzled out. This might suggest that the point at which children are entering their teens, and perhaps even later when they leave the home altogether, are times where there are significant opportunities to promote the uptake or continuance of outdoor recreation activities amongst parents.

Interestingly, very few participants talked about doing outdoor activities with young grandchildren or great-grandchildren. A few of the grandparents gave some reasons for this. Specific examples mentioned were that their families lived far away, or that they did not have contact with their grandchildren, or that despite looking after grandchildren regularly after school they have to be indoors cooking the children's meals.

Middle age and beyond

Many of the key moments of change described by older people occurred in middle age and beyond, although some of these experiences are not necessarily specific to this life stage. Perhaps the most prominent moment of change highlighted by participants was the onset of health problems. Health problems consisted not just of the onset of chronic diseases and disabilities; there were also indications that shorter-term illnesses and mental health crises also marked periods where participants stopped doing certain outdoor activities or reduced their overall level of engagement with the outdoors, with ongoing effects. For some participants the change occurred as a result of a deterioration in the health of others, usually spouses, and in one case the spouse of her walking companion.

The death of spouses or friends, along with the final stages of their lives, marked a pronounced period of transition in outdoor engagement for several participants. These major life events affected outdoor recreation behaviour in a number of different ways for different participants. Activities and outings ceased as ill spouses could no longer manage them, caring for spouses took priority over recreation, and hobbies that used to be done together were not necessarily taken up again by the surviving person in the absence of the companionship of the person who had died. The loss of a partner can mark a turning point in many aspects of life, and effects on outdoor recreation were not necessarily simply attributable to the loss of an activity companion:

Participant: Well...well...with that...after I lost my wife I just...well, what you say – you just give up the ghost, that's it...

Researcher: So was it not having her company...to be getting out and about, or?

Participant: Och I don't know, basically I don't know

Researcher: Just...things changed?

Participant: Everything just changes, that's it. (D5-M-81)

One participant remarked how losing her husband also affected her inclusion in activities that they used to do with other couples:

Because when you were married, it was you and him, you know, and then once he went, you just say to yourself 'What am I gonna do?' ... And then...see when you're married, you go out in couples... And then when you're left on your own, that's it – you're not invited to the same... (A3-F-78)

Although these losses tended to be described as points at which outdoor recreation diminished, it may also be a time when individuals can benefit from the social contact offered by group activities. One participant reported that when she was widowed she joined her walking group at the suggestion of a friend:

My friend [name]... You know, when my husband died, she said, you know, 'You've got to be involved! Do things! You mustn't stay home!'. And she told me about it, and they're very welcoming... (G3-F-80)

Moving to a new area marked a transition for some participants, with others mentioning giving up an outdoor activity when friends or neighbours moved away. Moving to a new area (or others moving away) resulted in activities being dropped due to the disruption to participants' social network, for example, no longer having a tennis partner or friends to go cycling or walking with. However, moving to a more rural area was seen to open up more opportunities for outdoor recreation although these opportunities were not always taken advantage of to their full extent. A number of the Grantown-on-Spey participants had moved there at the point of retirement, or at the point of winding down their career. Their reasons for choosing to move to the area were varied, however a few noted that they had regularly visited the Cairngorms for holidays previously. Although one participant described immediately joining a hill-walking club on his arrival, another explained that since moving to the area he and his wife were not doing as much outdoor recreation as they had expected to:

It's quite different actually. I tell everybody that being on holiday somewhere is different from living there. Because you have a house, a garden to look after, and so you know, we have… I've been in the garden and working in the garden is like being outdoors anyway, and what have you… So you know, that occupies more of the time than you expect, so we've done less walking and cycling than we thought we would do when we originally came here. (G5-M-73)

The point of retirement itself was described by some as an important moment of change in their outdoor recreation participation. A few participants talked about joining walking groups or clubs, and having more time for outdoor activities after retiring; because, as one put it:

Because you've got...you're master of your own time, when you're working you're not master at all.(G2-M-75)

However, many participants did not feel that they have a great deal of time for outdoor leisure activities in their retirement due to other commitments and responsibilities taking precedence. For others who had previously had opportunities to spend time enjoying visits to a park as part of their work caring for others (e.g. as a care assistant in a residential home or childminder), retirement marked a reduction in outdoor recreation. On balance, however, more participants talked about retirement as a point at which they started doing more outdoor recreation rather than less. This may suggest that the point of retirement could be an advantageous time to engage people in walking groups and other initiatives to promote outdoor recreation.

Finally, a number of participants mentioned that they had previously been very active outdoors when walking dogs on at least a daily basis, but that their walking became much less frequent when their dog(s) passed away. This is likely to affect people of all ages, however advancing years may discourage people from getting a new dog:

…we didnae want another dog because we didn't… if you got a young puppy, you didnae ken how long we were going to last and you didn't want to leave it (D3-M-72)

Similarly, another participant felt that the only thing that would encourage her to walk more was getting a dog but she did not feel that she should because of her age.

Overall, the analysis of participants' life histories of outdoor experience complements the analysis of current barriers in a number of ways. Firstly, they serve to highlight the large extent to which outdoor recreation amongst older people depends on social networks and health. These are connected in that it is not only the health of the individual, but also that of other members of their family and social circle, that impact on outdoor recreation in this age group. It is notable that many of the moments of change described by participants relate to changes in social networks and social capital, suggesting that outdoor recreation practices are rather vulnerable to disruption as a result of such changes. Interventions like walking groups may therefore offer a more resilient basis for outdoor recreation since members can come and go whilst the continuity of the group is retained. As well as providing a different view on barriers to outdoor recreation, the life history perspective also highlights the experiences through the life course that have helped to shape participants' current participation in outdoor recreation (or lack of it). For some people, experiences and role models of their early years may have just as much influence on outdoor recreation behavior as particular barriers relevant to their current situation. Finally, the identification of key moments of change helps to highlight points at which there may be enhanced opportunities to engage people in outdoor recreation. It should, however, be noted that there are also generational issues to take into consideration here, for instance, getting married and having children may affect outdoor recreation differently now than it did for our participants who may have married more than 70 years ago in some cases. Furthermore, whilst the participants in this study talked specifically about getting married, 'settling down' or finding a long-term partner may be the more salient transition period for the present generation of younger and middle-aged adults.

3.3.4 Awareness of and attitudes towards interventions

Awareness of and recruitment to walking groups

In each case study, several of those participants who were not already engaging in a walking group noted their awareness of existing groups in their area. Some participants were, however, aware only of clubs doing walks that were beyond their ability due to the distance or terrain covered, yet unaware of existing local opportunities for more gentle health walks. Others were aware of these health walks groups but had assumed that they were still beyond what they could manage, although from these participants' descriptions of their abilities this was not necessarily the case. Conversely, some participants were aware of a local health walk group but felt that they would not be challenging enough for them.

Non-group members mentioned becoming aware about local walking groups through the involvement of friends or acquaintances, or seeing the group congregating regularly in a local greenspace. There were a variety of ways that participants who attended walking groups first learned about the group, the most common being through word of mouth from friends or family who already attended. For some, being actively invited or encouraged by friends was central to their decision to get involved:

A friend asked if I'd like to...go...to join in, and...I probably wouldn't have joined if she hadn't asked me because I'm...not very good at that. But, I just felt that I keep saying 'No!' to...you know, when people ask me to do things, so I thought 'Well, I really ought to'... And I enjoy meeting different people... Yeah it's good...(G1-F-68).

Others heard about the group through doorstep visits promoting local healthy living initiatives, through printed materials (a community centre prospectus), or at the recommendation of a health professional. Several individuals who were already members of such group health walks were aware that their group promoted itself through posters and leaflets, but a number felt that such initiatives should be promoted or 'advertised' more. When discussing how the awareness of local groups might be raised, some participants who did not attend a group recommended placing notices in the local newspaper as well as in local meeting places, doctors' surgeries etc. Some felt that a great deal of information was only available online, which was a problem for the many older people who do not own a computer or are not confident in using one.

One of the Arbroath participants had joined her walking group on the recommendation of her physiotherapist after having hip and knee replacement operations and felt strongly that health professionals had an important role in promoting such interventions:

I wish the physiotherapists or the nurses or the doctors would say to them when they get this done walk more, try and join a group, and walk with the group. I think they should push that more. They don't push it enough. (A6-F-90)

She went on to talk more specifically about how she felt that health professionals working in hospitals should recommend walking groups to those having surgery on their joints as a matter of course as "walking is the answer" when it comes to recovery. One of the more active participants in Grantown-on-Spey had heard about local general practitioners (GPs) referring patients to join a group. When asked about what they might think if given a 'green prescription' or referral to a walking group from a doctor views were mixed. For example, one participant stated:

I might take heed if he was suggesting something like that. But at the same time I feel that I'm quite fit for an eighty-four year old (A5-M-84)

Another who never participated in outdoor recreation was sceptical:

Oh I'd say 'Oh that'll be right!' (D3-F-72)

Another participant had made efforts to increase her physical activity as a result of a recommendation from a health professional but felt that the challenge she was set was unrealistic:

So that was my green prescription, the cardiologist said to me I must do five hours a week cardiovascular... And I said 'Would a walk not do?', he said 'No! You've to work up a sweat', and I thought 'In your dreams mate, I'm not doing [laughing] five hours cardiovascular' (A1-F-75)

These views on green prescribing suggest that this may be a valuable way to promote outdoor recreation amongst older people and that there is a potential role for both GPs and hospital staff in doing so. However the negative opinions and experiences highlighted here suggest that framing these referrals solely in terms of exercise and keeping fit may be counterproductive in some cases. Where individuals are content with their physical fitness or current levels of activity, framing in terms of the social and mental wellbeing benefits of group walks in nature may be advantageous. Furthermore, recommendations should be sensitive to patients' current levels of activity and perceived ability.

Attitudes towards group walks

Amongst the group walkers, getting exercise and improving fitness were mentioned by some as both motivations for joining a group and benefits experienced as a result of attending. However most of the participants attending walking groups reported the social aspect to be the primary draw or benefit for themselves and for other members of the group:

And I think the thought of a cup of tea or whatever afterwards, I think that's what some people really enjoy – just the social aspect... …Well, it's just lovely to be with some people – some different people. And I think... people who are on their own, you know, it's really important to have this bit of socialising. (G1-F-68)

Participants in the Baxter Park gentle walking group, a large group of 40+ walkers which runs three times a week, noted that they particularly enjoyed the opportunity to mix with other types of people, for example talking to the younger people or those in the group with learning disabilities. It was also felt that walking as part of a group gave safety in numbers, which was particularly important for those who lacked confidence walking alone (see section 3.3.2). At the same time, however, the social nature of group walks can be intimidating at first. For example, one participant talked about how she, being quite introverted and having experienced anxiety issues, had to 'build herself up' to walking with other people. Having support or a familiar face in a group appears to be an important facilitating factor for people thinking about joining groups. Many of the group walkers who participated in the study had the benefit of knowing someone in

the group already, which encouraged them to join. Another participant described how his wife had accompanied him on his first group walk:

So she knows quite a few of them with all this keep fit and all the rest of it so she came the first week and met [name of group leader] and various other ones, and I thought that's fine yeah I can cope with this. So I just made it an intention to go every week (D2-M-67)

Having a 'buddy' to go along with on the first visit or two may be particularly helpful for those experiencing mental health problems. For example, one participant talked about how a regular member of her walking group started out attending with the company of a support worker, soon gaining confidence within the group.

Those who did not already participate in group walks also reported mixed attitudes towards the social aspects of these initiatives. Some of these attitudes reflect barriers to outdoor recreation discussed above in section 3.3.2. Whilst some felt that it was that the social aspects would appeal to them the most, others were put off by it due to preferring their own company for walking, wanting to be able to stop and start as they pleased, or feeling that the group setting would reduce the opportunities to see wildlife. Some comments highlighted negative attitudes towards the social climate of a local health walks group:

They just go there for the social chat, they're not serious about it"

Yes it's… a health chat!"

..they yack yack and everybody knows everybody's.. they're all gossiping about one another. (Grantown-on-Spey focus group, females)

Some participants in Arbroath and Grantown-on-Spey noted that the walking groups they had experience of were populated largely by women. A small number of (female) participants felt that this might be a factor which would discourage men from attending. As noted by one male participant the reasons for this imbalance are likely to be complex, yet such an imbalance is not universally seen in clubs for older people:

Now as it happens um...for reasons you'd have to look into very carefully, its 80-90% women. You laugh about it...one laughs about it and says well the men all die off by that age and the women are in charge but um...I went to a poker group for a while which wasn't my scene but I thought I'll just try it. Now that was all men… (G6-M-77).

Although this male participant felt quite comfortable in the company of women, he noted that a small proportion of women in the group were "a bit antagonistic having men at all, they'd prefer they weren't there". These issues around gender in walking groups highlight a number of questions for outdoor recreation participation, for example in establishing how common this skewed female:male ratio is and in understanding the causes and exploring the implications of such imbalances, including identifying potential strategies for overcoming barriers they might pose.

Other attitudes to walking groups tended to centre around perceptions of their difficulty level and how these aligned with individuals' own abilities. Several of the participants who never or very seldom engaged in any recreational walking in the outdoors reported that they would not be able to manage a group walk, primarily because of constraints to their mobility, and felt they would not be able to keep up with others:

Never thought about it, the point is I feel as if with me having a three-wheeler and having to walk that way that people can't be bothered, that's what I think. That's my opinion. I dinna want to be a burden to anybody. (D8-F-91).

When going on to discuss how they would feel about gentle walks with others of the same ability level some of these participants expressed an interest in such a group. Others, however, gave reasons why they would not be likely to get involved such as not having the time, or simply not being interested. A number of more active participants knew of groups doing much more advanced walks which were felt to be too challenging, or in one case, unappealing due to the lack of places to stop for lunch or a coffee on more remote rural routes.

For some health walks groups were perceived to be not challenging enough, or not stretching their abilities:

It's just a wander I think isn't it? It's not a proper walk (G4-Focus group-female)

Sometimes...I think 'Oh gosh, it would be good if we could walk a bit faster', then I think [laughing slightly] 'Well, I'm lucky I can walk faster!'. But, you know, you've got to be tolerant and...and eh...appreciate that everybody can't do the same thing, so... But no, it...I think that the social aspect's very important and not so much the exercise bit (G1-F-68)

Another participant perceived the local health walks group to be targeted at people older than him, although several members were in fact younger:

They're much older than I am! I don't know how old. (G2-M-75)

Members of a health walk group in Arbroath mentioned one person who came to the group once but did not return. They felt that she probably felt that at 60 she was much younger than the others there, and that she was more of an active person. As one commented:

Ours is definitely an age group like.. nae 100% of your health maybe. (A6-F-90).

One walking group member, having regularly attended a gentle health walk was looking forward to seeing an improvement in his mobility after an upcoming operation and displayed an interest in finding out about other walking groups in the area. Groups might therefore usefully highlight other opportunities in the local area to move to a high level of activity or slightly more challenging walk. However, whilst participation may help to increase the ability of some, others may find that deteriorating health may mean that they can no longer manage to attend their regular group. Some participants in Grantown-on-Spey mentioned that until recently they had another group for less able walkers that met at the same time, then both groups would join together for coffee after their walk. Due to a lack of volunteer walks leaders this lower level group had to be discontinued, which was a great loss to some of the former participants. These examples highlight the potential benefits of providing local walking groups at a range of levels,

with integration between the groups allowing for movement between as some progress to a higher level and others find that they are no longer to do as much as they previously could.

Participants attitudes towards walking groups also depended upon whether they found the formal, organised nature of such initiatives attractive or not. Having walks planned and organised by someone else was attractive for some as it meant little preparation or effort was needed beforehand, so it was easier to make the decision to attend. Others however felt that this aspect was offputting as they preferred the idea of more informal and flexible approach:

I thought 'No, I want to walk when I want, where I want, and how long I want. I want to dictate what I am going to do'. So...I'd rather get together with the four or five people and say 'Let's go round by this today' or they'll say 'Well, could we go around this way for a change? (A1-F-75)

For one walking group member, continuing to attend regularly was partly down to feelings of obligation towards the walk leader due to the effort they expend in organising the walks and the fact that they are there rain or shine to lead the group.

Awareness of and attitudes towards other types of intervention to promote outdoor recreation

Few other types of initiative other than walking groups were discussed. There were however some mentions of other interventions which are worth highlighting. Two participants in Arbroath were members of a self-organising, self-financing Disabled Ramblers Group. This group goes for day trips on a fortnightly basis during the summer months, taking up to 15 attendees on visits to places like parks, historic houses and gardens and coastal towns which are explored on mobility scooters. These participants highly valued the social benefits of these trips and noted that many of the members never get outdoors otherwise. Such interventions may offer valuable opportunities for disabled people to connect with the outdoors, however for one participant who was more mobile it was questionable whether the use of a mobility scooter was indeed necessary for her to be able to access the outdoors:

Well it was a friend of mine who was in it, and she asked me if I'd like to go. But when I went I was gonna be doing the walking... But 'no no' she says 'As long as there's a scooter, you can take a scooter'... (A3-F-78)

Neither of the participants in the Disabled Ramblers Group described any barriers to participating in the group's activities. When prompted, one participant did identify a number of criteria for selecting appropriate places for the group to visit. These were: having room for the minibus and trailer to park, manoeuvre, load and unload; having access to disabled toilets and a café; and fairly even path surfaces. This participant reported that the group did not have any problems finding places to visit. The only reported constraints faced by the group were financial. The group was limited in terms of the number of people that could attend outings, as funds only permitted the hire of one minibus and wagon. It was also reported that the group was looking for external funding sources as the cost of outings had increased, meaning that the subscriptions paid by individuals have had to be increased.

One participant in Grantown-on-Spey talked positively about the provision of information leaflets on walking routes for all levels of ability in the Cairngorms National Park. He felt that because this information was so freely available "there aren't any barriers… in fact it's the opposite" (G2-

M-75). Other participants in Grantown-on-Spey had also heard about ‘Green Gym’ conservation volunteering opportunities in the area though they were unsure as to what was involved and felt that they would want to know more before they could tell if they were interested.

The idea of walking football was discussed with a couple of participants but was met with some scepticism by both. The attitudes expressed were either that they “wouldn’t be any use at it” or that they felt it “looks ridiculous”, although one male participant admitted that it might be enjoyable and if there was a group in his area he might go along at least to spectate for a while.

Facilitating older people’s engagement in walking groups

The analysis of participants’ awareness of and attitudes to walking groups offers a number of conclusions to be made regarding effective facilitation of outdoor recreation engagement through such initiatives. Firstly, it is clear that walking groups are unlikely to be able to adopt a ‘one size fits all’ approach. Rather having a range of local groups tailored to different levels of ability may better meet the needs of potential users. There also may be value in exploring whether there is appetite locally for ‘quiet walking groups’ more focused on the landscape and wildlife than socialising for those who are discouraged by some of the social aspects of walking groups but would value the safety of a group. Similarly, for some participants the skewed female:male ratio in walking groups was found to be a possible factor influencing the decision to join the group. This suggests that there may be value in exploring attitudes towards gender-specific groups. However, drivers to tailor interventions to meet different needs must also be balanced with considerations of inclusivity, and this is a tension that may need to be negotiated at the local level and driven by the needs of particular communities. There are also practical limitations to this - opportunities to tailor groups to particular needs also depend on the availability of volunteer walk leaders and the resources available to train and support them.

The case study work revealed that there appear to often be groups of different abilities running in parallel in local areas, supported or affiliated with different organisations. There may be significant opportunities to increase communication and integration between existing groups. For example, producing joint marketing information about the different local walking groups operating at different levels of difficulty could help raise awareness and allow recipients to select the initiative most suited to them. Greater links between existing groups could also help facilitate individuals moving between groups as their ability levels change.

Finally, the analysis points again towards the importance of social capital in older people’s decisions about whether to join a group and the benefits experienced that encourage continued participation. To further promote walking groups in communities, groups might consider the opportunities for members to invite less active friends or relatives to join the group for a taster session, or encourage potential new members to bring along a buddy at least until they get to know the other members of the group. Analysis presented here with regards to participants’ satisfaction with their current levels of outdoor recreation participation suggest that intrinsic (self-driven) motivations may not be enough to encourage many people to make a change. As well as receiving encouragement from friends or relatives already engaged in groups, there is a great deal of potential for professionals across the health services to promote outdoor recreation or ‘green exercise’ to patients, not only to increase levels of physical activity but also for social and mental wellbeing objectives. At the same time, walking groups do not have a universal appeal, so other interventions should also be explored.

3.4 Limitations

This section summarises some of the main limitations of the case study work, specifically with respect to the sample's gender imbalance and comparability between case study areas.

Firstly, the sample contained more women than men, although we tried to compensate for this with a few additional people interviewed than originally intended. Previous research has noted that men are less likely than women to participate in community organisations and make less use of local health services, as well as having lower life expectancy (Milligan et al., 2013). These factors may have contributed towards the female:male ratio in the sample. For example the oldest male participant was 84, whereas female participants ranged into their nineties.

Secondly, it is difficult to draw out many differences in barriers to outdoor recreation between the case study areas because: (1) in Grantown-on-Spey participants were more likely to be part of organised walking groups; (2) in Arbroath there seemed to be more people with health problems and disability; (3) potential socio-economic differences between participants in the study areas may have masked area effects. For example, more of those in Grantown-on-Spey were retired professionals as compared to the Arbroath and Dundee participants.

4. Conclusions

A number of conclusions can be drawn from the spatial analysis carried out in section 2 and the case study analysis discussed in section 3. These are listed below in relation to the project's research questions.

How does the spatial distribution of older people, including those with disabilities, differ from that of the population as a whole?

- There is a tendency for older people and older people with disabilities to be over-represented in remote/very remote small towns and rural areas (i.e. compared to the national average). On average, the number of people aged 65 or above was approximately 30% higher than expected in remote small towns and very remote rural areas, and 24% higher than expected in remote rural areas. Likewise, the number of people aged 85 or above was nearly 50% higher than expected in remote small towns, and just over 20% in very remote small towns, remote and very remote rural areas. Similar patterns were observed for older people with a limiting long-term health problem or disability.
- The high concentrations of potentially vulnerable older people and older people with disabilities in remote and very remote small towns require careful consideration, despite the larger overall numbers of older and disabled people in urban areas.

Do participants want to engage more with the outdoors?

- There is a tendency towards acceptance or stoicism regarding current levels of engagement. Few participants expressed a desire to engage more.
- Outdoor recreation is not a clear cut concept, and the definitions used in policy and practice may not necessarily correspond with the interpretations and meanings of outdoor recreation held by older people. The research revealed that these meanings may depend on what is most salient to the individual for their wellbeing, for example getting sufficient physical activity and social contact may be emphasised more than being active in the 'great outdoors'. The setting is not necessarily seen as being as important for wellbeing as getting out and about and seeing other people.
- Physical activity is important to many participants, however this often takes place through active travel or recreational walking in the built environment; reasons for this include remaining purposeful and desiring social stimulation. In rural areas the distinction between built and natural environments may be less meaningful to residents.
- The findings suggest that many older people live busy and active lives and other activities may take precedence over outdoor recreation.

What barriers discourage or prevent them from accessing the outdoors?

- By and large older people seem to experience multiple, and inter-related, barriers preventing them from participating in outdoor recreation.
- The main barriers identified in the interviews were: health and mobility; social connections; fragility and vulnerability; time commitments and motivation; weather and season; and safety.
- The interplay and interactions between barriers are important as the co-occurrence of multiple barriers is common and intensifies the effect of individual barriers to participate in outdoor recreation.
- Investigating moments of change has highlighted how and when barriers emerge in people's lives and provides a valuable perspective on how interventions might best be timed during the life course. The key moments of change identified were: getting married and having children; children growing up; moving to a new area; retirement; the onset of health problems; spouses or friends passing away; and dogs passing away.

How can we facilitate greater use of the outdoors amongst older people?

- Interventions need to take into consideration the interactions between barriers and should aim to address multiple barriers simultaneously.
- Social connections are central to older peoples' engagement in outdoor recreation. Interventions with a social element, like walking groups, may offer a more resilient basis for outdoor recreation since members can come and go whilst the continuity of the group is retained. The life history analysis revealed that many of the moments of change described by participants relate to changes in social networks and social capital, suggesting that outdoor recreation practices are vulnerable to disruption as a result of such changes. Therefore, interventions may benefit from positioning themselves more in terms of social benefits than physical activity.
- It may be useful to increase communication and integration between existing groups running in parallel in local areas. For example, producing joint marketing information about the different local walking groups operating at different levels of difficulty could help raise awareness and participation.
- It may be useful to tailor interventions to suit people of different abilities and preferences and to clearly advertise the interventions as such. There may be value in considering single sex groups or 'quiet walking groups' for example. We acknowledge that this may be constrained by the availability of volunteer leaders.
- The finding that most participants were satisfied with or accepting of their current level of participation suggests that addressing the barriers to outdoor recreation may not be enough and highlights the importance of actively encouraging greater uptake in this group (e.g. through green prescriptions).

5. Recommendations for policy and practice

A number of policy recommendations can be drawn from the research:

1. **Interventions** to promote outdoor recreation by older people (including those with a disability or limiting long-term health condition) **should address the multiple and inter-related barriers** preventing older people from participating in outdoor recreation. **Integrated and holistic approaches involving different organisations from the public sector** (e.g. local authorities), **third sector** (e.g. local community and voluntary groups), **and private sector** (e.g. social enterprises) **may offer opportunities to successfully address multiple barriers at the local level through complementary and co-ordinated action**.

2. To maximise effectiveness, those involved in delivering interventions to promote outdoor recreation should consider how initiatives might target people at points in their life when changes in outdoor recreation are more likely to occur. The identification of such key moments of change helps to highlight points at which there may be enhanced opportunities to engage people in outdoor recreation. Four key moments were more strongly associated with changes in levels of participation in outdoor recreation: getting married and having children; children growing up; the onset of health problems; and spouses or friends passing away.

3. **Interventions need to look beyond the sole individual and consider also his/her immediate network of relatives and/or friends**. Other peoples' health, generally those the participant lived with or who were common outdoor companions also affect how much the person was able to get outside.

4. Interventions through "green prescribing" by doctors and medical professionals may be a valuable way to promote outdoor recreation amongst older people by providing encouragement and motivation to engage in outdoor recreation. However, "green prescribing" alone may be ineffective and in some cases counterproductive if the recommendations are not seen as being realistic. Green prescribing interventions should be integrated with existing initiatives like health walks which offer opportunities for overcoming social and motivational barriers.

5. Organisations managing places for outdoor recreation should ensure that spaces are kept obstacle free (e.g. even ground, free of tree roots etc.), clean and well-lit, offering basic facilities such as toilet, benches and rest spaces. These aspects are especially important for older people and more so for those with physical disabilities.

6. **Interventions should identify ways of providing transport (private or public) access to outdoor spaces to older people**. Where possible, groups promoting outdoor recreation amongst older people (e.g. through walking groups) should explore opportunities to link with existing community transport services to provide pick up and drop off services.

7. Interventions should promote a variety of local (walking) groups operating at different levels of difficulty, and accommodating different types of abilities and preferences. There may be value in considering single sex groups or 'quiet walking groups' for example. Local authorities should work in conjunction with third sector actors to establish a varied portfolio of activities and groups to maximize inclusivity.

8. Communication and integration between existing initiatives (e.g. walking groups) running in parallel in local areas should be supported. Opportunities to support integration through the involvement of intermediary bodies (e.g. local authorities, health services or partnerships such as Local Outdoor Access Fora) working with local initiatives should be explored. This integration would include 'far and wide' dissemination of existing opportunities through joint marketing information about the different local walking groups and their activities.

Acknowledgments

The team would like to thank Katherine Irvine for her contribution to the initial design of case study work and to report finalising.

References

Atterton, J. (2012) Towns and rural Scotland: vibrant or vulnerable? In SAC Consulting: Rural Scotland in Focus 2012. Available at http://www.sruc.ac.uk/download/downloads/id/470/rural_scotland_in_focus_2012_web_version (Accessed 7th December 2015). pp 27-42.

Copus, A. and Hopkins, J. (2015) Mapping Rural Socio-Economic Performance e (SEP): Report for Rural Communities Team, Food, Drink and Rural Communities Division, The Scottish Government. Available at http://www.hutton.ac.uk/sites/default/files/files/publications/SEP%20INDEX%20FINAL%20REPORT%20220515%20-%20WEB.pdf (Accessed 7th December 2015).

Equality Act 2010. Chapter 15. Available at http://www.legislation.gov.uk/ukpga/2010/15/contents (Accessed 7th December 2015).

Ferguson, C.J. (2009) An Effect Size Primer: A Guide for Clinicians and Researchers. Professional Psychology: Research and Practice 40(5): 532-538. doi: 10.1037/a0015808.

Irvine, K. N., Warber, S. L., Devine-Wright, P. and Gaston, K. J. (2013) Understanding Urban Green Space as a Health Resource: A Qualitative Comparison of Visit Motivation and Derived Effects among Park Users in Sheffield, UK, *International Journal of Environmental Research and Public Health*, 10, 417-442.

Milligan, C., Dowrick, C., Payne, S., Hanratty, B., Irwin, P. Neary, D. & Richardson, D. (2013) Men's Sheds and other gendered interventions for older men: improving health and wellbeing through social activity: A systematic review and scoping of the evidence base. Report for Liverpool-Lancaster Collaborative (LiLac) and Age UK. Lancaster University Centre for Ageing Research.

Mitchell, R. (2013) Is physical activity in natural environments better for mental health than physical activity in other environments? *Social Science & Medicine*, 91, 130-134.

Scottish Government (2014) Analysis of Equality Results from the 2011 Census. The Scottish Government, Edinburgh. Available at http://www.gov.scot/Resource/0046/00460679.pdf (Accessed 17th December 2015).

Slee, B., Hopkins, J., Copus, A. (2014) Rural Perth and Kinross area profile for the LEADER local development strategy (2014-2020). Available at http://www.pkc.gov.uk/CHttpHandler.ashx?id=24227&p=0 (Accessed 17th December 2015).

Yin, R. K. (2003). Case study research: Design and methods (3rd ed.). Thousand Oaks, CA: Sage.

Appendix A

Data sources for mapping and spatial analysis

Table A.1.: Sources of population and geographical data.

Description *	Data type and use	Source
Populations aged 65/85 or over (**A**) Household population aged 65 or over and living alone (**A**) Male and female populations aged 65 or over (**A**) Population with limiting long-term health problem or disability (**D**) Population with physical disability (**D**) Population with learning disability (**D**) Population aged 65 or over, and with a limiting long-term health problem or disability (**A**, **D**) Population denominators: total population, total household population	Protected characteristics data - Census	2011 Census data, downloaded from http://www.scotlandscensus.gov.uk/, bulk data files. Data extracted or derived from data tables QS103SC, LC1109SC, LC1117SC, QS303SC, QS304SC, LC3101SC. © Crown copyright. Data supplied by National Records of Scotland.
Hospital admissions with a diagnosis of coronary heart disease (**D**) Hospital admissions wih a diagnosis of cancer (**D**) Number of new cancer registrations (**D**) Claimants of Attendance Allowance (**A**, **D**) Male and female claimants of Attendance Allowance (**A**, **D**) Mid-year population estimates: 2009, 2012.	Protected characteristics data – Scottish Neighbourhood Statistics	Hospital admissions data published by Information Services Division Scotland, Secondary Care Team. Rights: ISD Scotland. Attendance Allowance claimant data published by Department of Work and Pensions Longitudinal Study. Rights: Department of Work and Pensions. Number of new cancer registrations published by Information Services Division Cancer Information Programme; Cancer Surveillance Team. Rights: ISD Scotland. Mid-year population estimates, 2009, 2012 published by National Records of Scotland. © Crown copyright. Data supplied by National Records of Scotland. All data downloaded from Scottish Neighbourhood Statistics (http://www.sns.gov.uk/). © Crown copyright. Contains public sector information licensed under the Open Government Licence v3.0.
2011-2012 Urban Rural Classification Lookup files	Lookup table (2001 Data Zones – Urban Rural Classification)	Scottish Government 2011-2012 Urban Rural Classification Lookup files. Available at http://www.gov.scot/Resource/0039/00399024.zip. © Crown copyright. Contains public sector information licensed under the Open Government Licence v3.0.
2011 Data Zone population-weighted centroids	Geographical (GIS)	Scottish Government – Data Zone Centroids 2011. Available at http://sedsh127.sedsh.gov.uk/Atom_data/ScotGov/ZippedShapefiles/SG_DataZoneCent_2011.zip. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015).
Urban Rural Classification 2011-12 Shapefile	Geographical (GIS)	Scottish Government 2011-2012 Urban Rural Classification Shapefile. Available at http://www.gov.scot/Resource/0039/00399160.zip. © Crown copyright. Contains public sector information licensed under the Open Government Licence v3.0.

* Protected characteristics assessed: A = age, D = disability.

Appendix B

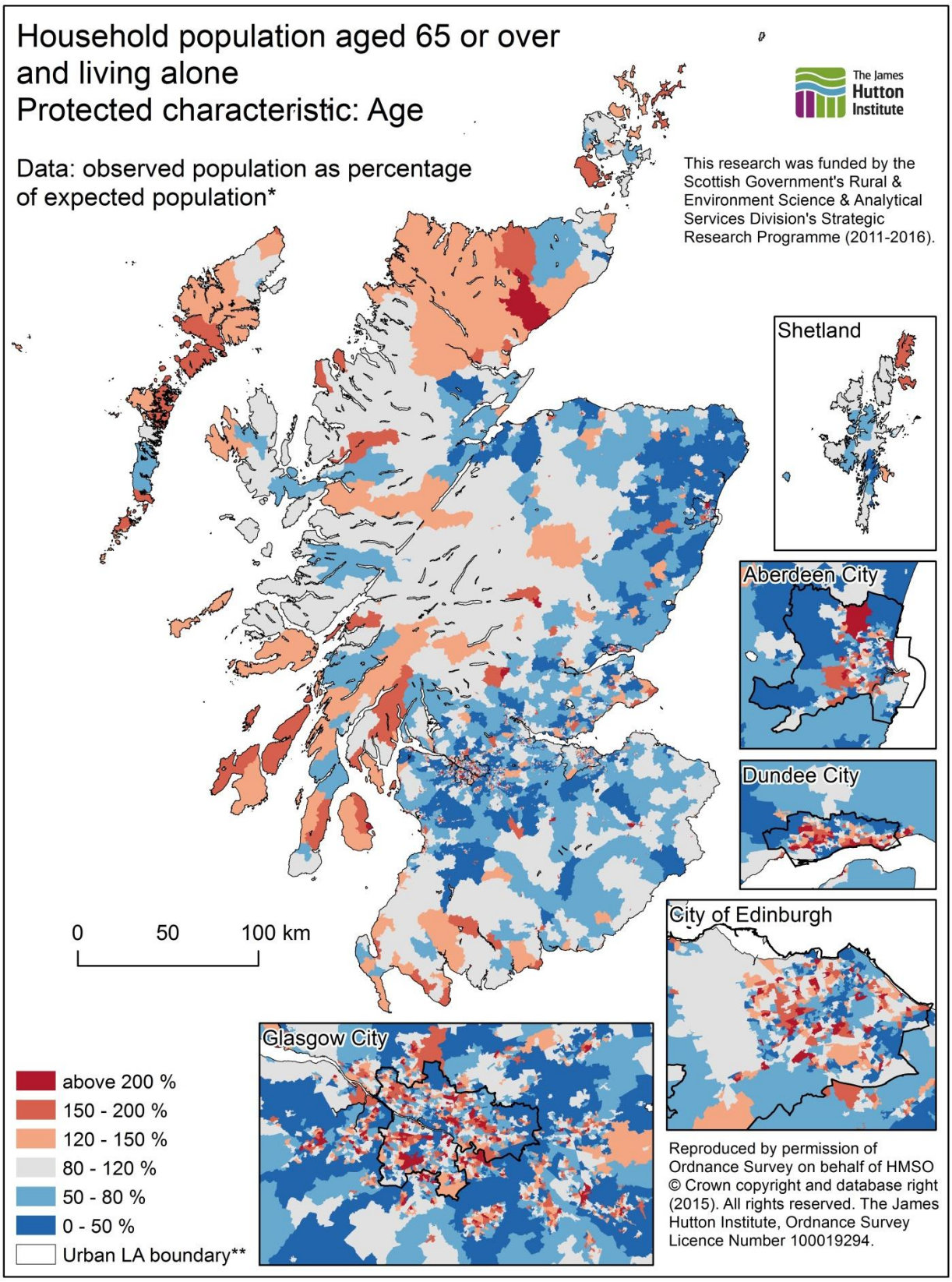
Mapping and spatial analysis by age and disability – additional indicators

Household population aged 65 or over and living alone

Table B.1.: Household population aged 65 or over and living alone.

Region	Total household population	Household population aged 65 or over and living alone	Household population aged 65 or over and living alone (% of expected)	Living alone (% of household population aged 65 or over)	% of Scotland household population	% of Scotland household population aged 65 or over and living alone
Very Remote Rural	159,593	11,163	**116.55**	32.52	3.07	3.58
Remote Rural	165,152	10,453	**105.46**	30.88	3.18	3.35
Accessible Rural	577,956	29,936	**86.30**	29.27	11.12	9.60
Very Remote Small Towns	66,385	4,946	**124.14**	40.07	1.28	1.59
Remote Small Towns	132,093	10,084	**127.20**	36.68	2.54	3.23
Accessible Small Towns	466,554	28,330	**101.18**	34.35	8.98	9.08
Other Urban Areas	1,614,911	94,538	**97.54**	36.06	31.08	30.31
Large Urban Areas	2,013,742	122,417	**101.29**	40.91	38.75	39.25

A further subset of older residents – those who were living alone in one person households – shows some patterns in common with the other age-related variables, in particular the ‘remoteness effect’ described earlier. The number of older residents living alone was well below that expected in accessible rural areas, and was well above expected in remote and very remote small towns. In urban areas and in accessible small towns, the number of people aged 65 or over and living alone was very close to that expected (i.e. national average). At this regional level, the proportion of older household residents who lived alone was relatively lowest in the three rural areas, and highest in large urban areas and very remote small towns. Figure B.1. supports the regional breakdown above, as there are prominent concentrations of dark blue data zones (where the number of people that were older and living alone was half that expected or below) in areas surrounding the central belt, Aberdeen and Inverness. Higher than expected values appear associated with some more remote areas (the far north, parts of Argyll and Bute, and the Western Isles) and dark red data zones (more than double the expected population with this protected characteristic) are concentrated in the four largest cities.



* Expected population calculated from Data Zone household population, and the proportion of Scotland's household population who were aged 65 or over and living alone.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text. Colour scheme adapted from information at http://colorbrewer2.org/.

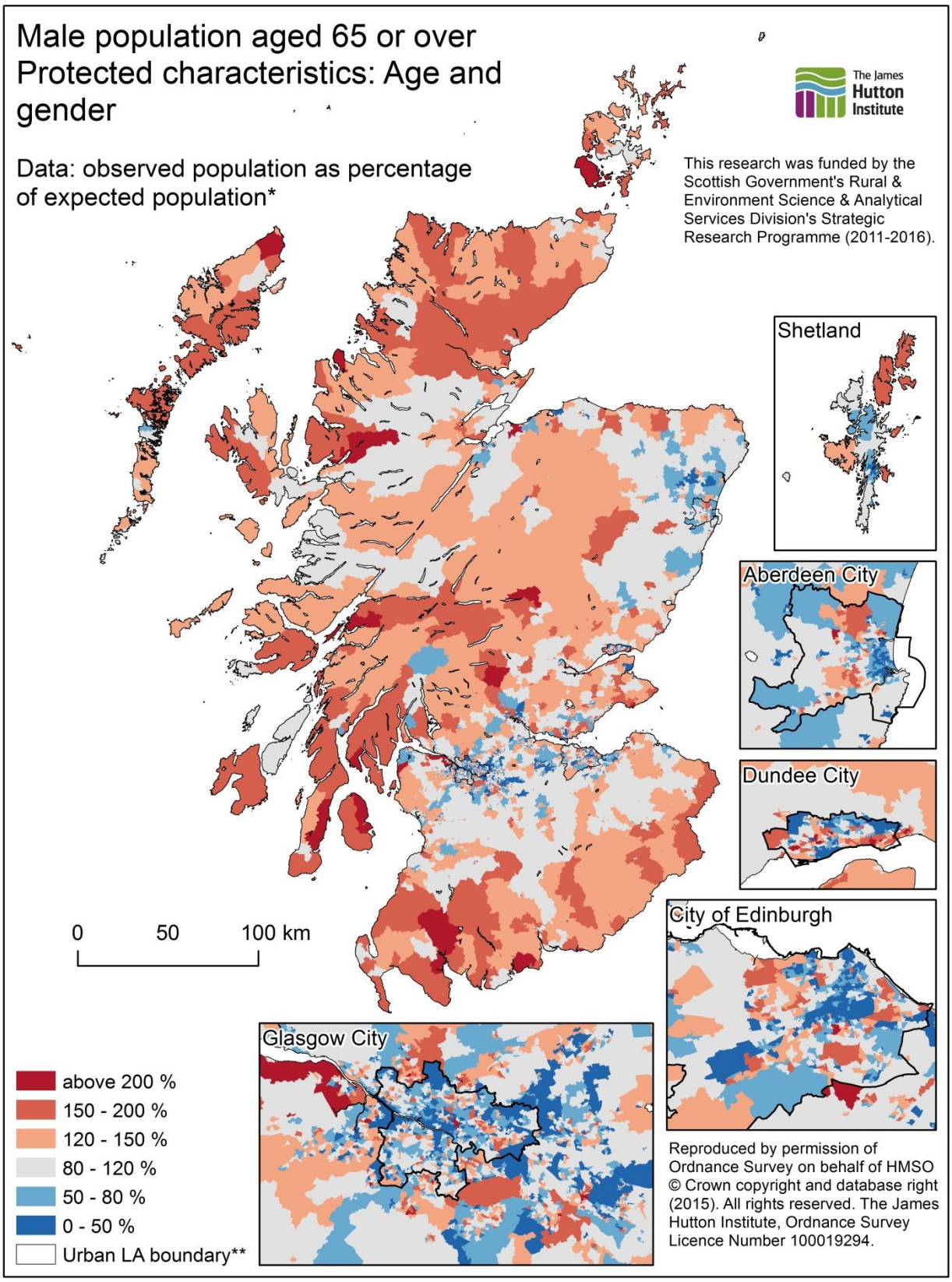
Figure B.1.: Household population aged 65 or over and living alone, Scotland.

Male and female populations aged 65 or over

Table B.2.: Male and female populations aged 65 or over.

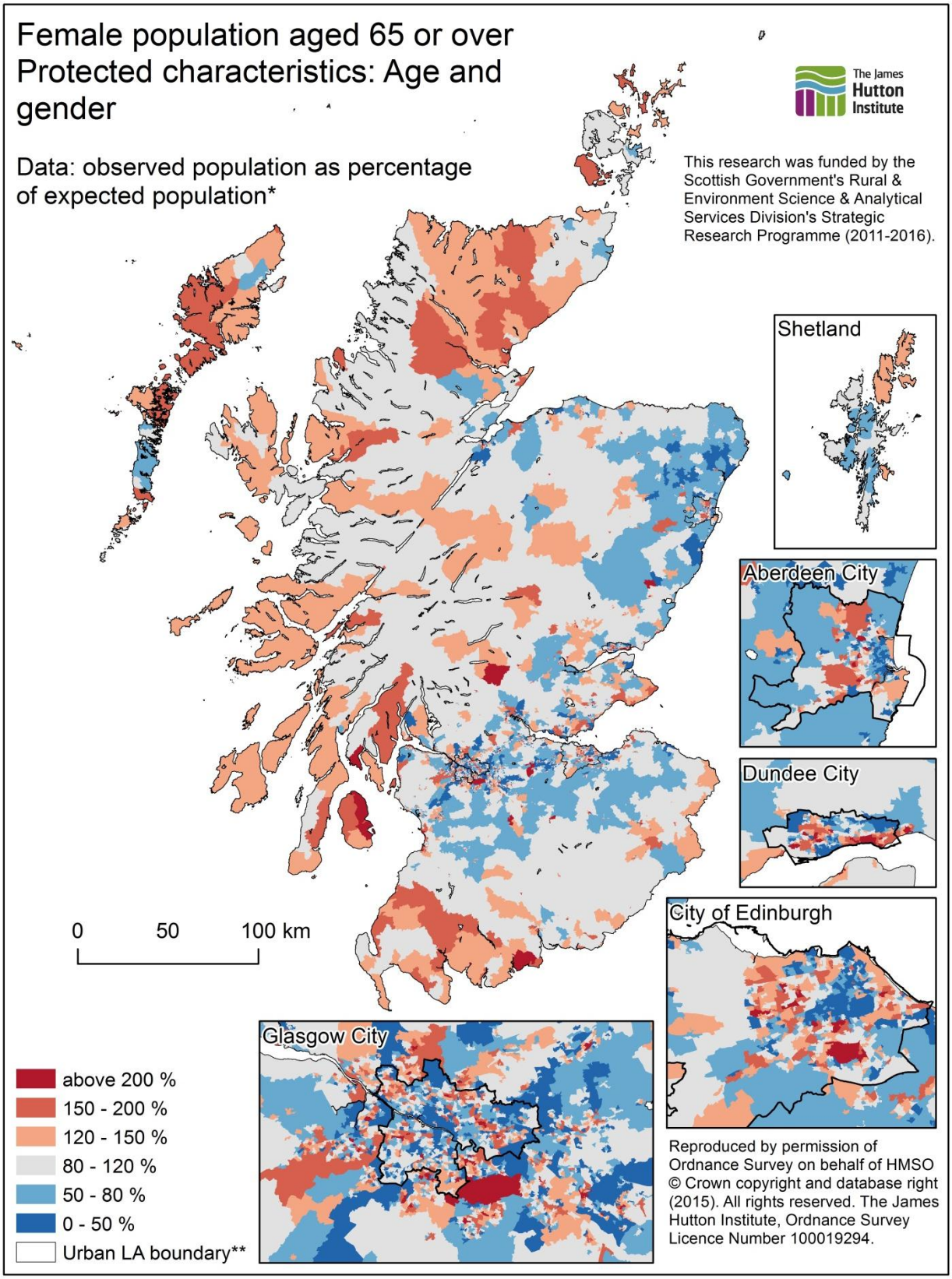
Region	Total population	Male population aged 65 or over	Female population aged 65 or over	Male population aged 65 or over (% of expected)	Female population aged 65 or over (% of expected)	Female population (% of 65 or over population)	% of Scotland population	% of Scotland population – male and aged 65 or over	% of Scotland population – female and aged 65 or over
Very Remote Rural	162,017	16,305	18,904	**138.87**	**121.96**	53.69	3.06	4.25	3.73
Remote Rural	168,013	16,275	18,749	**133.67**	**116.65**	53.53	3.17	4.24	3.70
Accessible Rural	588,757	49,026	56,328	**114.91**	**100.01**	53.47	11.12	12.78	11.12
Very Remote Small Towns	67,549	5,432	7,556	**110.97**	**116.93**	58.18	1.28	1.42	1.49
Remote Small Towns	134,493	12,410	16,692	**127.33**	**129.73**	57.36	2.54	3.23	3.29
Accessible Small Towns	472,352	37,145	48,184	**108.52**	**106.63**	56.47	8.92	9.68	9.51
Other Urban Areas	1,640,430	117,714	156,558	**99.02**	**99.76**	57.08	30.98	30.68	30.90
Large Urban Areas	2,061,792	129,432	183,624	**86.63**	**93.09**	58.66	38.94	33.73	36.25

Statistics on the distribution of people who in 2011 were a) aged 65 or over and male and b) aged 65 or over and female, broadly mirror the distribution of the overall older population. However, there are some interesting differences between the distributions of older men and older women, which are especially noticeable in rural areas. Older groups of both genders were particularly over-represented in very remote and remote rural areas, and remote small towns. However, in rural areas, the difference is greater for older men than it is for older women: in very remote rural areas the population of older men was 139% that expected (respective figure for older women: 122%), with a similar difference in remote rural areas. Therefore, while remote and very remote rural areas had higher than expected numbers of older residents, older men were particularly over-represented in these areas. More detailed mapping shows that ‘dark red’ data zones (with more than double the expected number of older men) are found in more remote rural areas of Scotland, such as areas of Dumfries and Galloway and the Borders, areas of the Highlands and Islands and west coast (Figure B.2.). However, the numbers of older women do not appear to be as far above expected values in the same regions (Figure B.3.). The maps also indicate that in some areas which are closer to cities (including Aberdeenshire and the area to the south of the central belt), there are several ‘blue’ data zones where the population of older women was below that expected, but in the same areas the population of older men was much closer to the expected population. This pattern is reflected to some extent in the overall statistics for accessible rural areas (Table B.2.).



* Expected population calculated from Data Zone population, and the proportion of Scotland's population who were male and aged 65 or over.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

Figure B.2.: Male population aged 65 or over, Scotland.



* Expected population calculated from Data Zone population, and the proportion of Scotland's population who were female and aged 65 or over.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

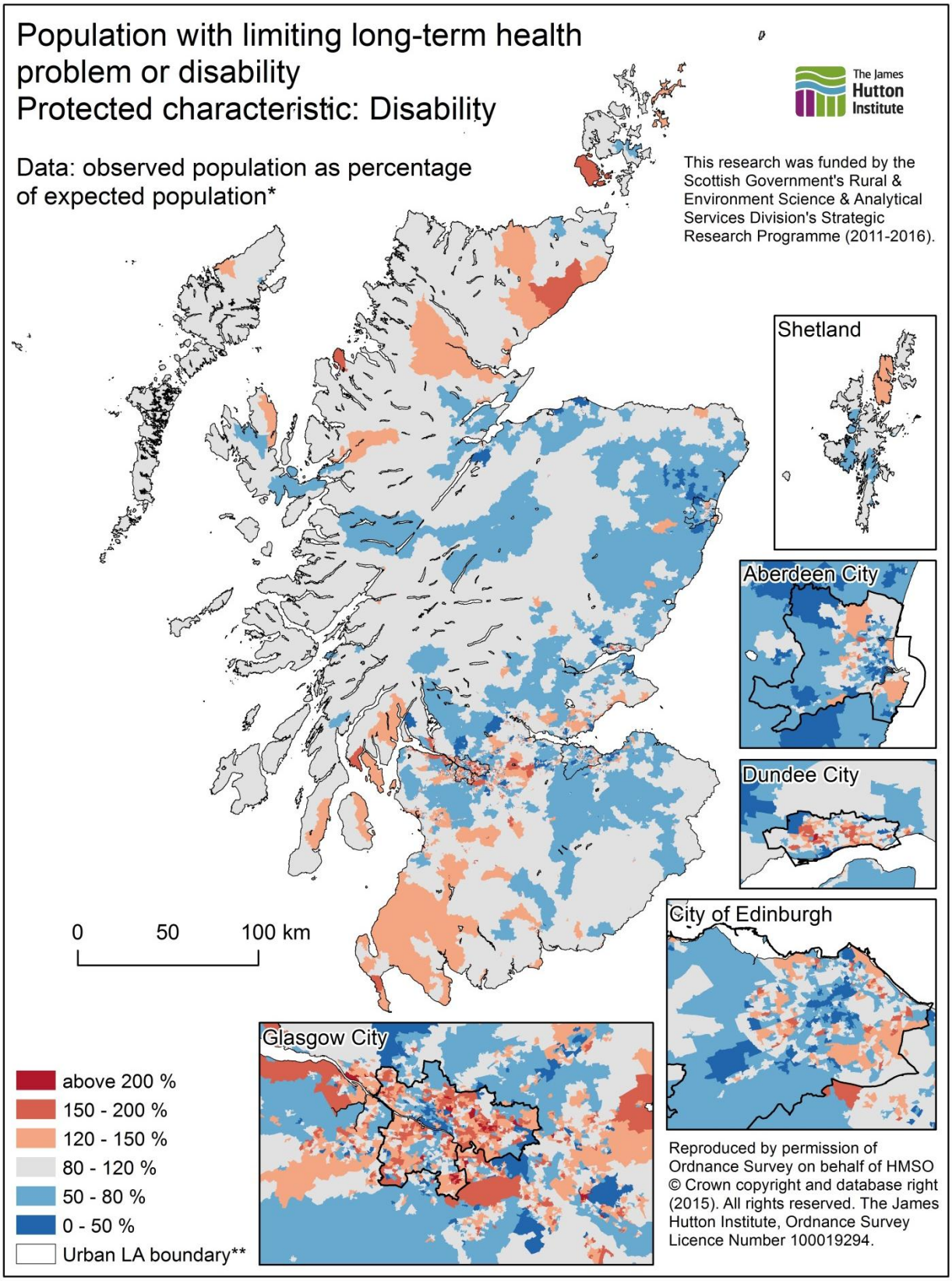
Figure B.3.: Female population aged 65 or over, Scotland.

Population with limiting long-term health problem or disability

Table B.3.: Population with limiting long-term health problem or disability.

Region	Total population	Population with limiting condition/disability	Population with limiting condition/disability (% of expected)	% of Scotland population	% of Scotland population with limiting condition/disability
Very Remote Rural	162,017	32,002	**100.54**	3.06	3.08
Remote Rural	168,013	32,659	**98.94**	3.17	3.14
Accessible Rural	588,757	104,842	**90.64**	11.12	10.08
Very Remote Small Towns	67,549	13,493	**101.67**	1.28	1.30
Remote Small Towns	134,493	28,174	**106.63**	2.54	2.71
Accessible Small Towns	472,352	92,003	**99.14**	8.92	8.84
Other Urban Areas	1,640,430	328,364	**101.88**	30.98	31.56
Large Urban Areas	2,061,792	408,834	**100.93**	38.94	39.30

Among the eight regions of Scotland, the numbers of residents whose day-to-day lives were affected by a long-term health problem or disability in 2011 generally are much closer to expected (i.e. national) values than they are for the age-related variables. The distribution of Scotland's population with a limiting condition was very similar to that of Scotland's total population. However, this indicator suggests that accessible rural areas were the 'healthiest' region of Scotland, as the number of people with a limiting condition was over 9% lower than expected, a figure below that of any other region, and remote small towns were the least 'healthy' region overall. Figure B.4. shows a) the relatively low variation in populations with long-term conditions from expected values, and b) a tendency for data zones in some areas surrounding large cities (Aberdeenshire, Inverness, areas to the south of Glasgow and Edinburgh, and the Dunbartonshires and Stirling) to have lower than expected populations with long-term health conditions. Data zones in Greenock and traditionally deprived areas of Glasgow (e.g. Gorbals/Hutchesontown, Shettleston/Parkhead, Glenwood/Castlemilk) are particularly prominent among those data zones where incidence of long-term conditions was more than double that expected.



* Expected population calculated from Data Zone population, and the proportion of Scotland's population who had a limiting long-term health problem or disability.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text. Colour scheme adapted from information at http://colorbrewer2.org/.

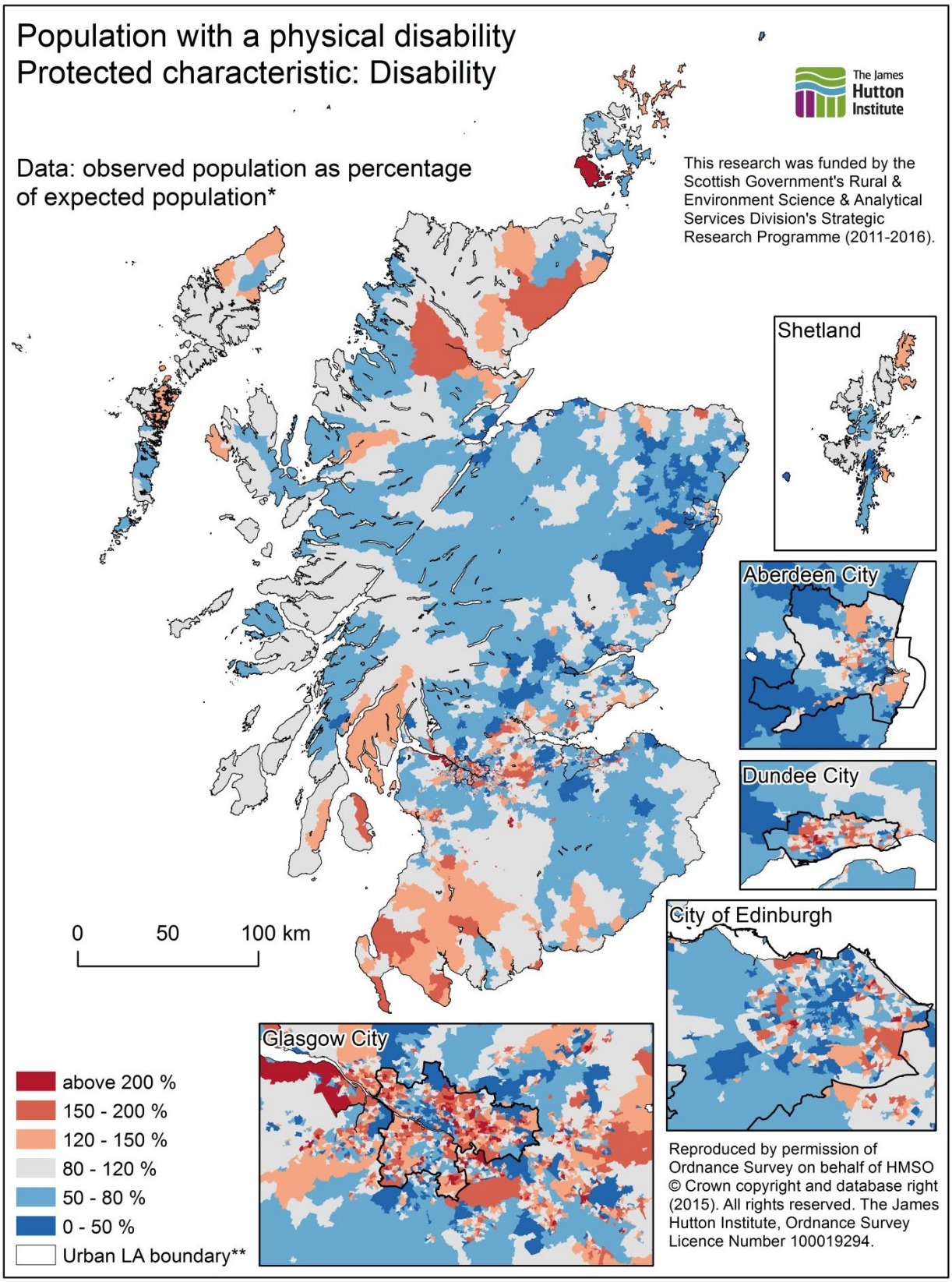
Figure B.4.: Population with limiting long-term health problem or disability, Scotland.

Population with a physical disability

Table B.4.: Population with a physical disability.

Region	Total population	Population with physical disability	Population with physical disability (% of expected)	% of Scotland population	% of Scotland population with physical disability
Very Remote Rural	162,017	10,614	**97.67**	3.06	2.99
Remote Rural	168,013	10,974	**97.38**	3.17	3.09
Accessible Rural	588,757	35,490	**89.87**	11.12	9.99
Very Remote Small Towns	67,549	4,686	**103.43**	1.28	1.32
Remote Small Towns	134,493	9,495	**105.26**	2.54	2.67
Accessible Small Towns	472,352	31,785	**100.32**	8.92	8.95
Other Urban Areas	1,640,430	113,847	**103.47**	30.98	32.05
Large Urban Areas	2,061,792	138,291	**100.00**	38.94	38.94

Across the eight regions of Scotland, populations who reported a physical disability do not differ greatly relative to expected (i.e. national) values, except in accessible rural areas, where the number of people affected by a disability was 10% lower than expected. It is notable that all three types of rural areas had smaller than expected populations with physical disabilities, and populations in all types of small town were more affected by physical disability than those of respective rural areas. Figure B.5. shows the large physical area covered by data zones in rural areas with below-expected populations of physically disabled people, with ‘dark blue’ data zones (where disabled populations were half expected populations, or less) located in closer proximity to some of the larger cities. There are 172 data zones where the disabled population (by this indicator) was double that expected: these are not prominent on the main map, but the inset map of Glasgow shows the concentration of far above expected values in that area. Two data zones classified as remote small towns at Newton Stewart (S01007517) and Dunoon (S01007366) have physically disabled populations which are more than two and a half times expected.



* Expected population calculated from Data Zone population, and the proportion of Scotland's population who had a physical disability.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

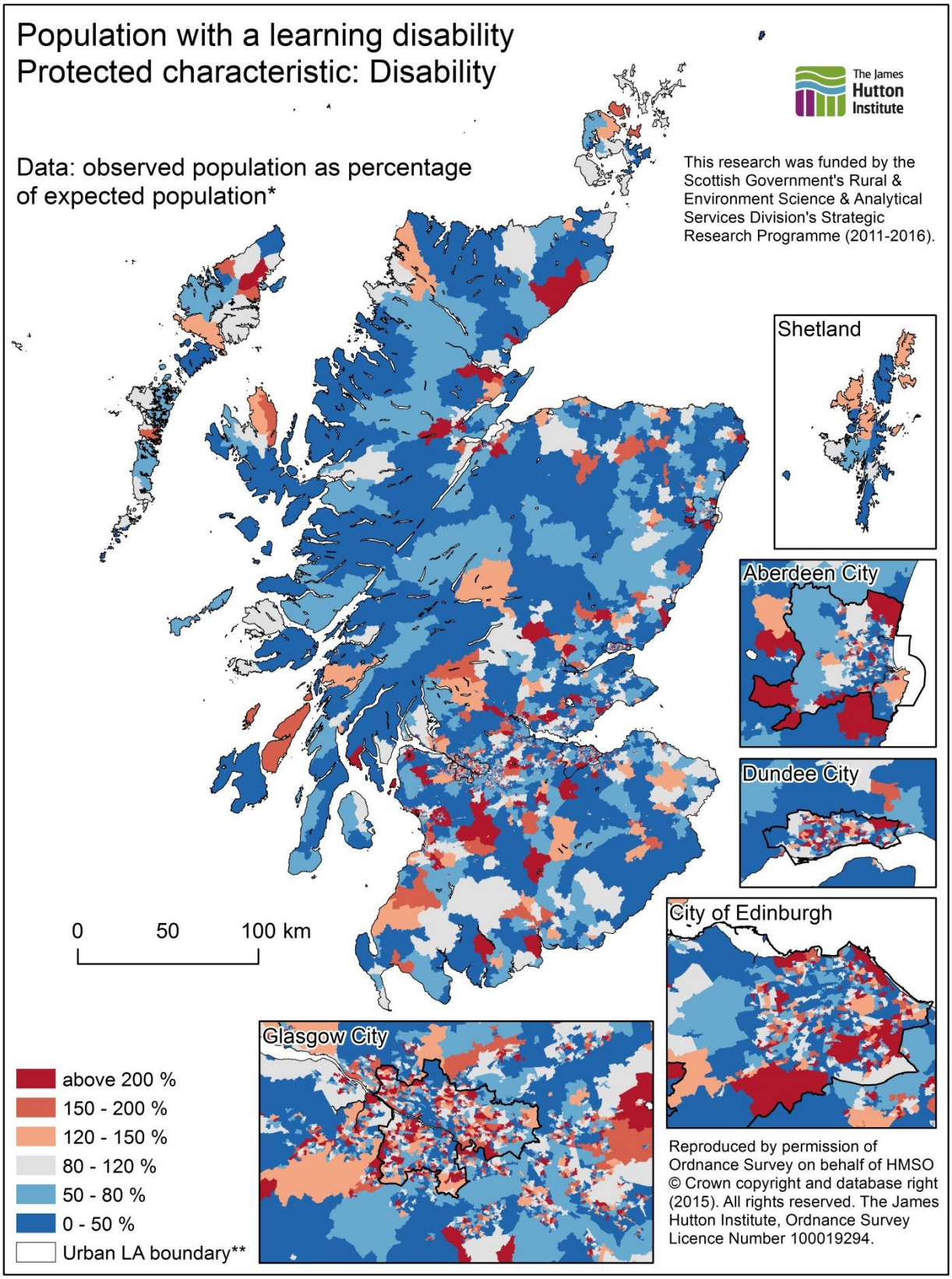
Figure B.5.: Population with a physical disability, Scotland.

Population with a learning disability

Table B.5.: Population with a learning disability.

Region	Total population	Population with learning disability	Population with learning disability (% of expected)	% of Scotland population	% of Scotland population with learning disability
Very Remote Rural	162,017	580	**71.95**	3.06	2.20
Remote Rural	168,013	709	**84.81**	3.17	2.69
Accessible Rural	588,757	2,527	**86.26**	11.12	9.59
Very Remote Small Towns	67,549	341	**101.45**	1.28	1.29
Remote Small Towns	134,493	830	**124.03**	2.54	3.15
Accessible Small Towns	472,352	2,219	**94.41**	8.92	8.42
Other Urban Areas	1,640,430	8,527	**104.47**	30.98	32.36
Large Urban Areas	2,061,792	10,616	**103.48**	38.94	40.29

Summary statistics for the eight Scottish regions related to the distribution of people who had learning disabilities show much greater variation than for other disability measures. All types of rural areas had much smaller than expected populations with a learning disability (markedly so for very remote rural areas). There is a particularly large contrast between the population who had a learning disability in remote small towns (124% of the expected population) and that in corresponding rural areas (85% of the expected population). However, these differences should be placed in the context of the very small overall numbers of people with learning disabilities (2,460) who lived in remote and very remote small towns and rural areas in 2011. Learning disabilities were relatively over-represented in both types of urban areas. Figure B.6. shows a highly varied pattern, but rural data zones in remote regions, including the western coast and islands and a large area of the Scottish Highlands and far north had well below expected numbers of people with a learning disability. Some of the very extreme data zone-level values could reflect the location of specialist schools and facilities. Data zones in affluent areas to the west of Aberdeen (S01006524, S01006516, S01006512) have extremely high values.



* Expected population calculated from Data Zone population, and the proportion of Scotland's population who had a learning disability.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2011. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Population data: derived from 2011 Census data. © Crown copyright. Data supplied by National Records of Scotland. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

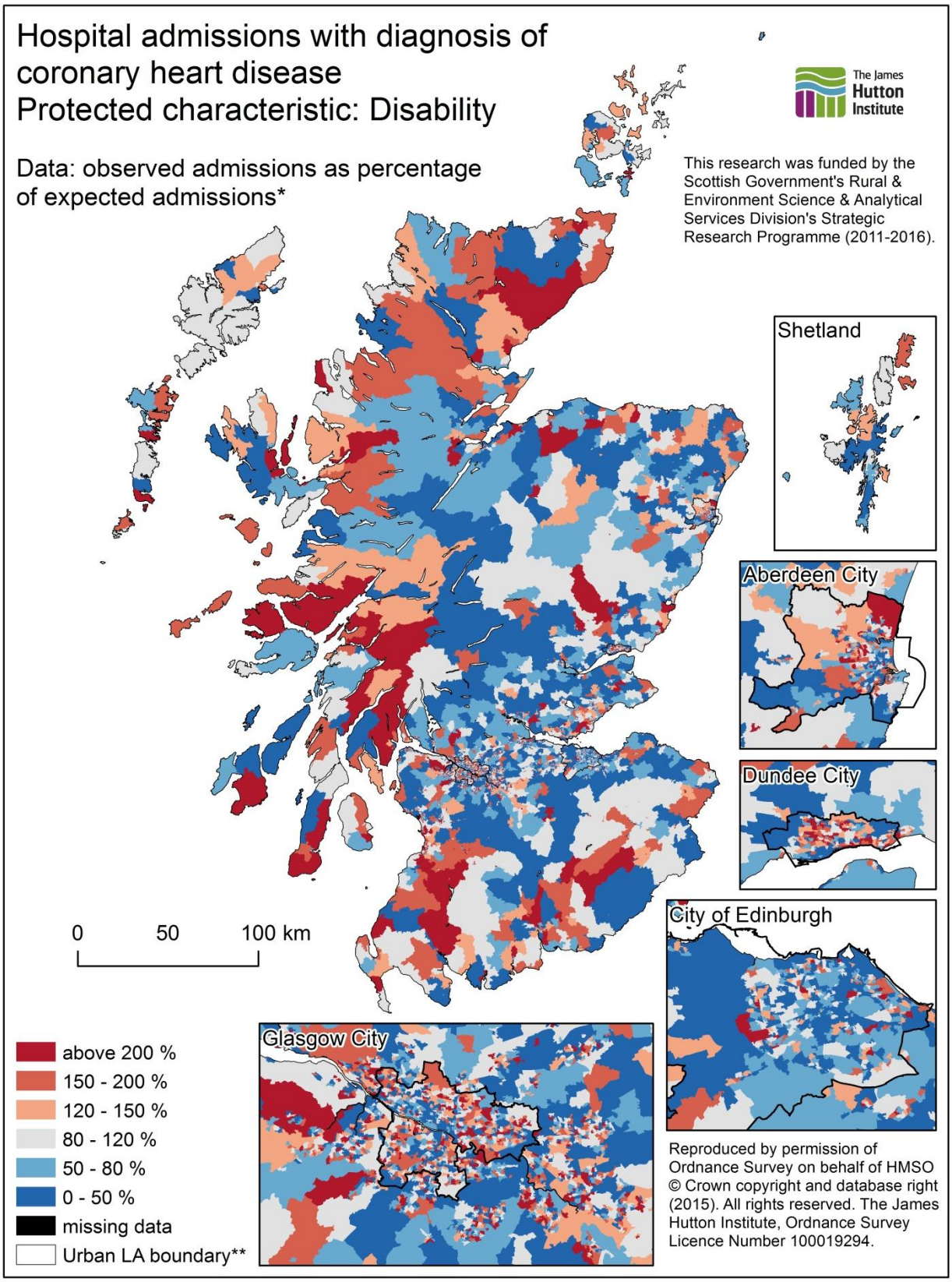
Figure B.6.: Population with a learning disability, Scotland.

Hospital admissions with a diagnosis of coronary heart disease

Table B.6.: Hospital admissions with a diagnosis of coronary heart disease.

Region	Total population	Total hospital admissions with CHD diagnosis	Total hospital admissions with CHD diagnosis (% of expected)	% of Scotland population	% of Scotland's hospital admissions with CHD diagnosis
Very Remote Rural	160,772	945	**120.30**	3.03	3.64
Remote Rural	182,949	926	**103.59**	3.44	3.57
Accessible Rural	642,653	2,910	**92.67**	12.09	11.21
Very Remote Small Towns	68,037	487	**146.49**	1.28	1.88
Remote Small Towns	124,252	777	**127.98**	2.34	2.99
Accessible Small Towns	456,662	2,337	**104.74**	8.59	9.00
Other Urban Areas	1,615,398	7,886	**99.91**	30.40	30.38
Large Urban Areas	2,062,877	9,688	**96.12**	38.82	37.32

The expected number of hospital admissions with a diagnosis of coronary heart disease was calculated from each region's total population and the ratio between the total number of such hospital admissions in Scotland and the total Scottish population. The figures in Table B.6. show that although actual numbers of hospital admissions by residents of remote and very remote small towns, and very remote rural areas, were much lower than in other areas, they were well above expected numbers based on population size. This is particularly the case in very remote small towns. There were fewer than expected hospital admissions for residents of accessible rural areas. Although a large majority of all hospital admissions with a diagnosis of coronary heart disease were from residents of urban areas, the overall numbers of admissions were not above those expected. Supporting the overall regional figures, Figure B.7. shows that some data zones whose populations had double the expected number of admissions are located in relatively remote areas, including the far south west, west coast, far north and parts of islands. Rural areas nearer to the central belt (e.g. parts of Fife, Stirling, Perth and Kinross and areas to the south of Glasgow and Edinburgh) have a clustering of "blue" data zones with far below expected numbers of hospital admissions. Aberdeen, Glasgow and Dundee contain several data zones with double the expected number of admissions, but these are less prevalent in Edinburgh. Among the most extreme data zone level values, there is a cluster of four data zones at the very remote small town of Wick where the number of hospital admissions related to coronary heart disease is more than three times the expected number.



* Expected admissions calculated from Data Zone population, and the ratio of the total of such admissions in Scotland to Scotland's population.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2001. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Hospital admissions and population data: downloaded from Scottish Neighbourhood Statistics. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

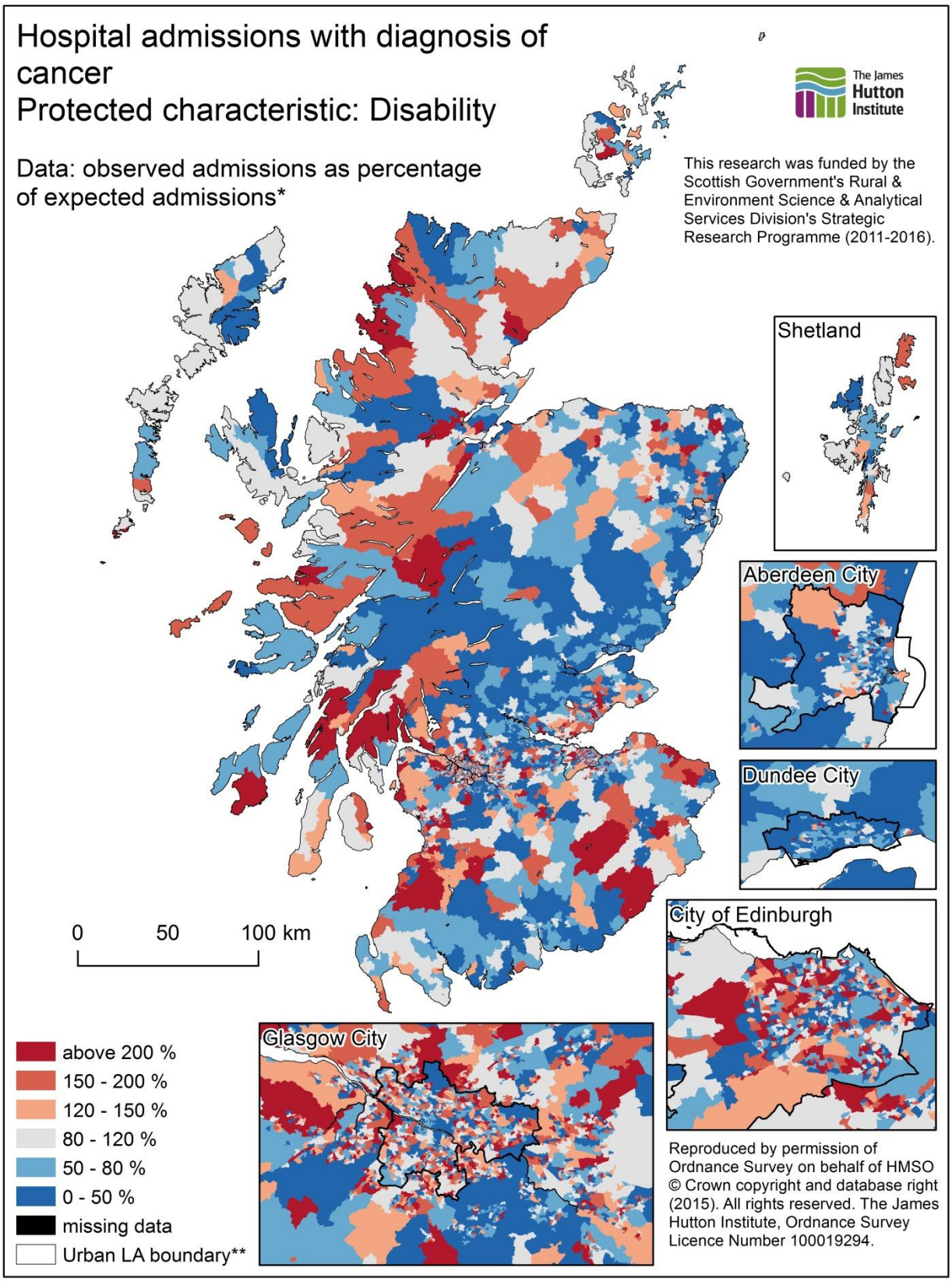
Figure B.7.: Hospital admissions with a diagnosis of coronary heart disease, Scotland.

Hospital admissions with a diagnosis of cancer

Table B.7.: Hospital admissions with a diagnosis of cancer.

Region	Total population	Total hospital admissions with cancer diagnosis	Total hospital admissions with cancer diagnosis (% of expected)	% of Scotland population	% of Scotland's hospital admissions with cancer diagnosis
Very Remote Rural	160,772	4,672	**108.88**	3.03	3.29
Remote Rural	182,949	5,163	**105.73**	3.44	3.64
Accessible Rural	642,653	16,004	**93.30**	12.09	11.29
Very Remote Small Towns	68,037	1,658	**91.30**	1.28	1.17
Remote Small Towns	124,252	3,594	**108.37**	2.34	2.53
Accessible Small Towns	456,662	12,504	**102.59**	8.59	8.82
Other Urban Areas	1,615,398	39,879	**92.49**	30.40	28.12
Large Urban Areas	2,062,877	58,328	**105.94**	38.82	41.13

The regional pattern for hospital admissions with a diagnosis of cancer (Table B.7.) is noticeably different from that of admissions with a diagnosis of coronary heart disease. Differences between observed numbers of admissions and expected numbers were not as large for residents of remote and very remote areas, and the admissions of residents in very remote small towns were noticeably below expected numbers, as opposed to being far above them for coronary heart disease admissions. Hospital admissions with a cancer diagnosis were over-represented among residents of large urban areas, remote and very remote rural areas, and remote small towns; and were under-represented among residents of accessible rural areas and other urban areas. Spatially, there is a more mixed pattern related to admissions with a diagnosis of cancer (Figure B.8.) than for coronary heart disease (Figure B.7.), although data zones with double the expected number of admissions are prominent across more remote areas, including the west coast, western islands and parts of the Highlands, south west and Borders regions. Perth and Kinross, Angus, Fife and Stirling contain data zones with far below expected numbers of admissions, and the Dumfries and Galloway area contains several data zones where admissions were far below expected. Notably, the City of Edinburgh local authority has several “red” data zones within it, while Aberdeen and Dundee City do not: these observations contrast with those for admissions with a diagnosis of coronary heart disease.



* Expected admissions calculated from Data Zone population, and the ratio of the total of such admissions in Scotland to Scotland's population.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2001. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Hospital admissions and population data: downloaded from Scottish Neighbourhood Statistics. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

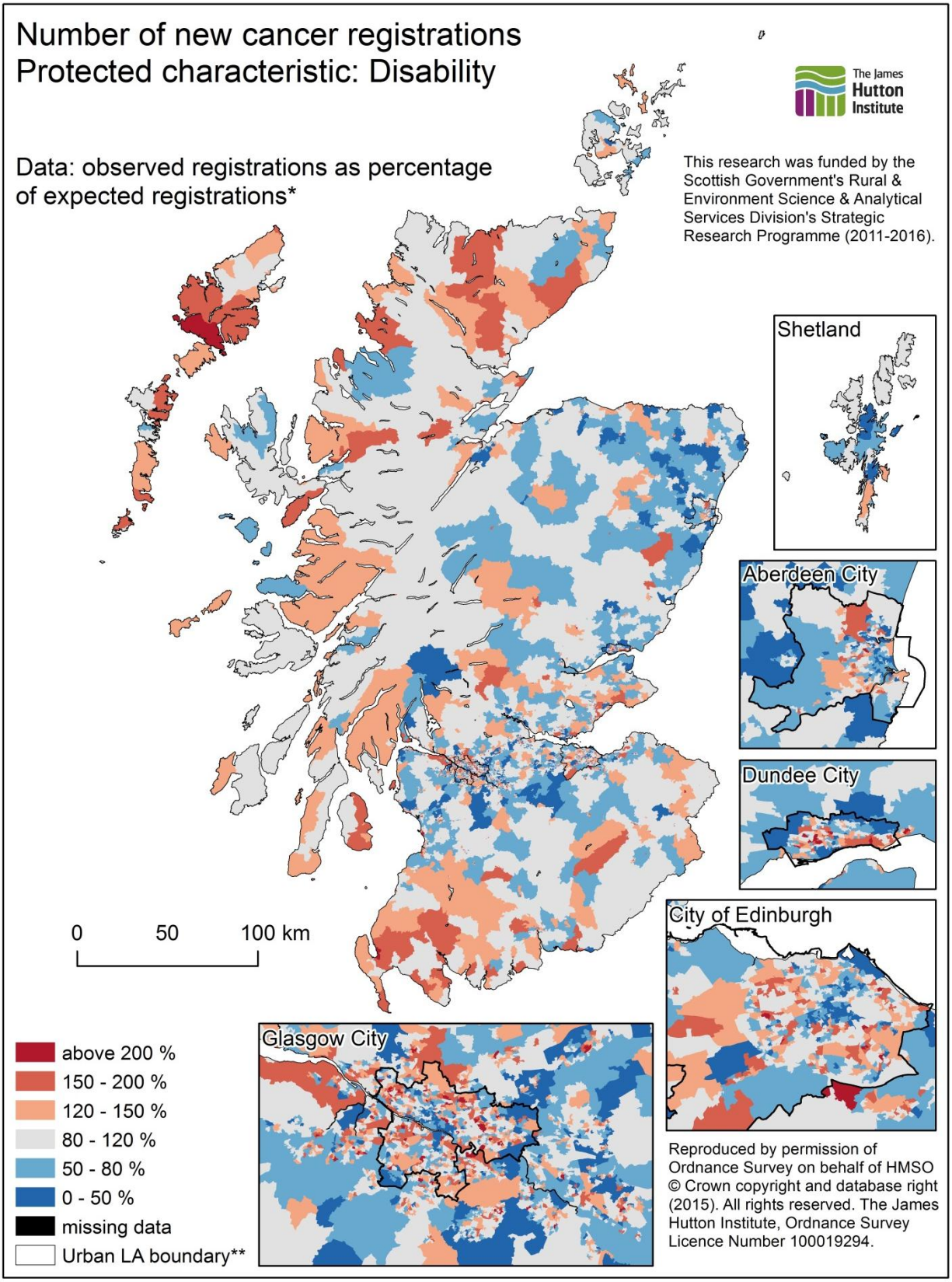
Figure B.8.: Hospital admissions with a diagnosis of cancer, Scotland.

Number of new cancer registrations

Table B.8.: Number of new cancer registrations.

Region	Total population	New cancer registrations	New cancer registrations (% of expected)	% of Scotland population	% of Scotland's new cancer registrations
Very Remote Rural	160,365	4,986	**113.76**	3.07	3.49
Remote Rural	181,114	5,280	**106.67**	3.46	3.69
Accessible Rural	625,059	16,051	**93.96**	11.95	11.23
Very Remote Small Towns	67,949	2,005	**107.97**	1.30	1.40
Remote Small Towns	124,158	4,078	**120.18**	2.37	2.85
Accessible Small Towns	455,450	12,867	**103.37**	8.71	9.00
Other Urban Areas	1,601,523	43,260	**98.83**	30.61	30.25
Large Urban Areas	2,016,282	54,462	**98.83**	38.54	38.09

The number of new cancer registrations in the 2005-2009 period (Table B.8.) were above expected values for remote and very remote rural areas and small towns, and were particularly over-represented in remote small towns (20% above expected values). This pattern is therefore similar to that for the hospital admissions data. Also in common with the hospital admissions data, accessible rural areas appear particularly ‘healthy’ by this indicator, and while urban areas recorded a large majority of all new cancer registrations, the numbers of registrations recorded in these areas were not above expected numbers. Figure B.9. shows groupings of data zones where numbers of new cancer registrations were well above average in more remote areas, including the far south west, locations on the Solway coast, Arran, and parts of Skye, the Western Isles and the far north. Areas which are associated with below expected numbers of cancer registrations include Aberdeenshire, the southern edge of the central belt and the Shetland mainland. The large urban local authorities show a mixed picture.



* Expected registrations calculated from Data Zone population, and the ratio of the total of new cancer registrations across Scotland to Scotland's population.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2001. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Cancer and population data: downloaded from Scottish Neighbourhood Statistics. Further information on data sources detailed within report text.
Colour scheme adapted from information at http://colorbrewer2.org/.

Figure B.9.: Number of new cancer registrations, Scotland.

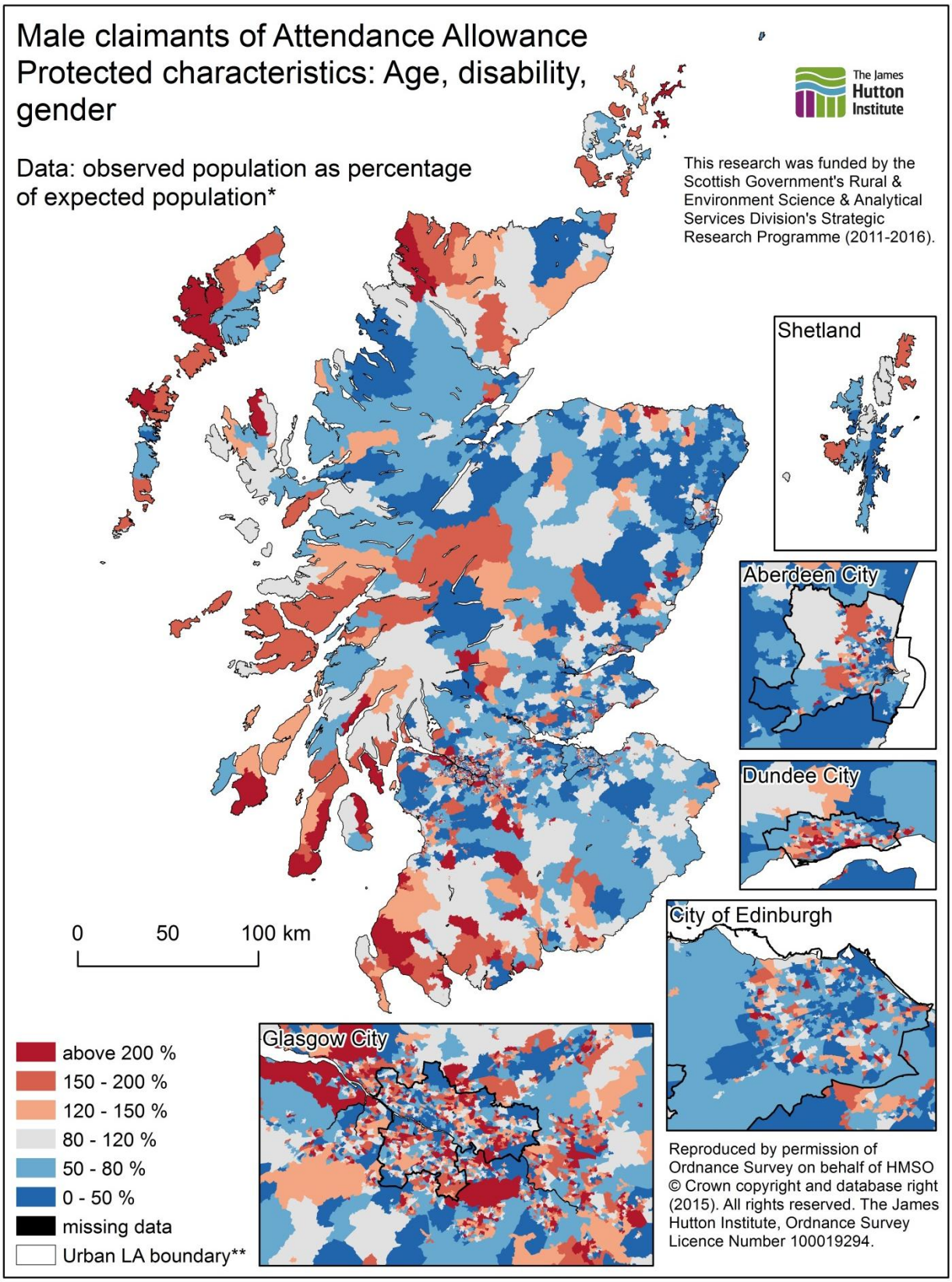
Male and female claimants of Attendance Allowance

Table B.9.: Male and female claimants of Attendance Allowance.

Region	Male claimants of AA*	Female claimants of AA*	Male claimants of AA (% of expected)	Female claimants of AA (% of expected)	Male claimants of AA (% of male 65 or over population)	Female claimants of AA (% of female 65 or over population)	% of Scotland population	% of Scotland population – male claimants of AA	% of Scotland population – female claimants of AA
Very Remote Rural	1,765	3,525	**112.99**	**109.65**	10.26	18.00	3.03	3.41	3.32
Remote Rural	1,810	3,280	**101.82**	**89.66**	9.88	15.90	3.44	3.50	3.08
Accessible Rural	5,205	9,685	**83.35**	**75.37**	9.56	15.66	12.09	10.06	9.11
Very Remote Small Towns	775	1,755	**117.23**	**129.00**	13.56	22.54	1.28	1.50	1.65
Remote Small Towns	1,425	3,110	**118.03**	**125.17**	11.58	18.96	2.34	2.76	2.92
Accessible Small Towns	4,595	9,290	**103.56**	**101.74**	12.05	18.98	8.59	8.89	8.74
Other Urban Areas	15,995	32,675	**101.90**	**101.16**	13.02	20.28	30.40	30.93	30.73
Large Urban Areas	20,145	43,010	**100.50**	**104.27**	15.04	23.07	38.82	38.95	40.45

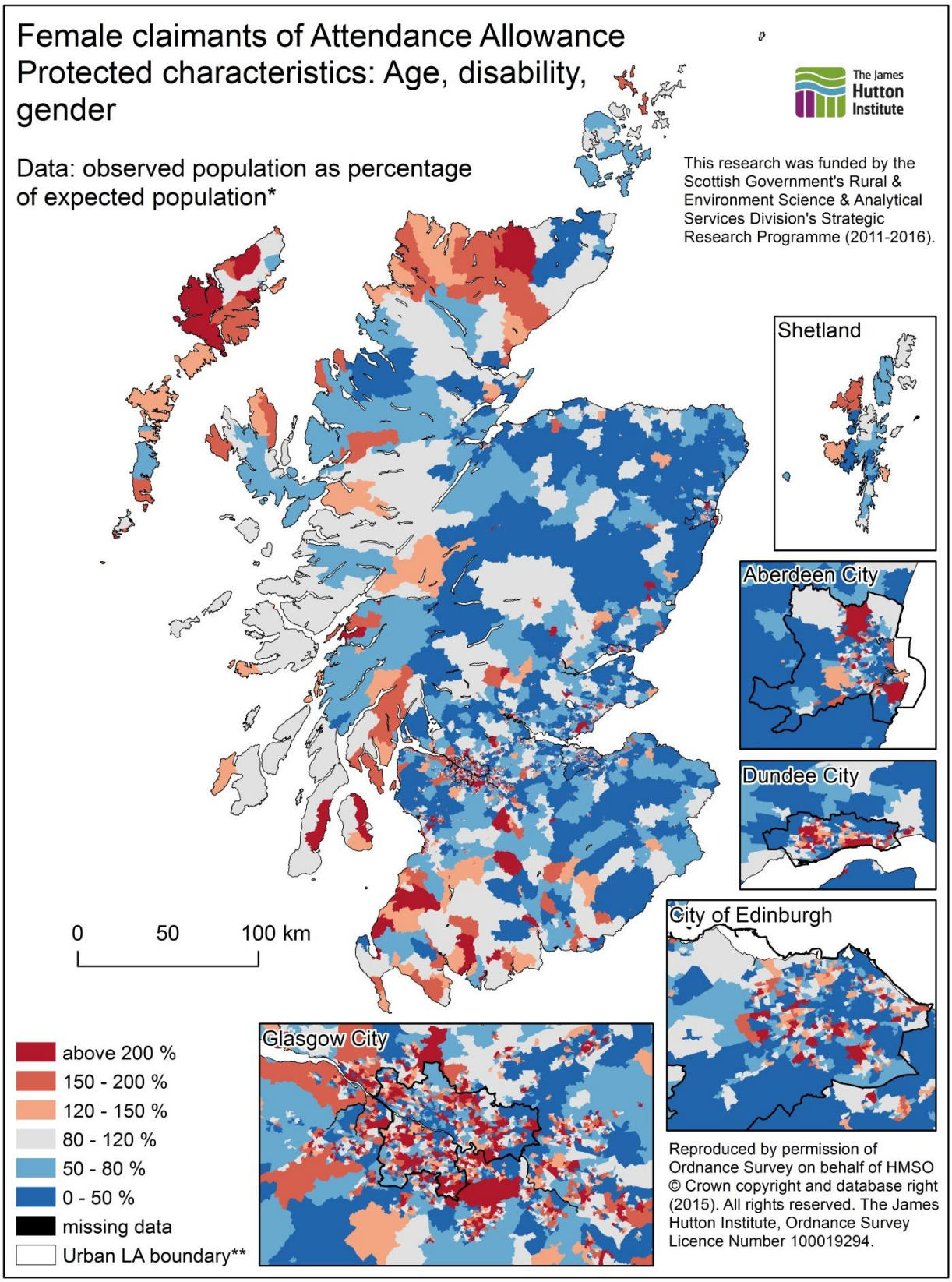
* Note that the regional numbers of claimants are summed from Data Zone-level figures for the fourth quarter of 2012 which were rounded from actual values.

Across Scotland, the number of female claimants of Attendance Allowance (106,330) was over double the respective male total (51,715). Table B.9. shows that numbers of female claimants were well above expected in remote and very remote small towns, above expected in very remote rural areas, but below average in remote rural areas and far below average in accessible rural areas. For male claimants, the pattern is similar, with total male Attendance Allowance claimants furthest above expected numbers in remote and very remote small towns and furthest below the expected in accessible rural areas. For men, differences between observed and expected numbers of claimants were smaller in these areas than for women. The spatial distribution of data zones where the number of Attendance Allowance claimants was far above expected differ for men and women: for male claimants, such data zones are more prominent in more remote areas (the west coast and islands near it, far south west, parts of the Highlands around Fort William and the Moray Firth coast) than for female claimants (Figures B.10. and B.11.).



* Expected population calculated from Data Zone population, and the proportion of Scotland's population who were male claimants of Attendance Allowance.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2001. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Attendance Allowance and population data: downloaded from Scottish Neighbourhood Statistics. Further information on data sources detailed within report text. Colour scheme adapted from information at http://colorbrewer2.org/.

Figure B.10.: Male claimants of Attendance Allowance, Scotland.



* Expected population calculated from Data Zone population, and the proportion of Scotland's population who were female claimants of Attendance Allowance.
** Local Authority boundaries of the four largest cities in Scotland shown to provide geographic context between main and inset maps. The scales of the main and inset maps differ.
Spatial data: Contains data from, and derived from, Data Zone Boundaries 2001. Copyright Scottish Government, contains Ordnance Survey data © Crown copyright and database right (2015). Also contains data derived from Ordnance Survey Boundary-Line™ data.
Attendance Allowance and population data: downloaded from Scottish Neighbourhood Statistics. Further information on data sources detailed within report text. Colour scheme adapted from information at http://colorbrewer2.org/.

Figure B.11.: Female claimants of Attendance Allowance, Scotland.

Appendix C

Project information sheet

Barriers to outdoor recreation for older people

About the project

Getting into the outdoors is a great way for people to keep healthy and active. We know that older people in Scotland are less likely to take part in outdoor recreation than young or middle-aged adults, so many may be missing out on the benefits. This project aims to gain a better understanding of the barriers to outdoor recreation that older people experience.

To do this we are looking to interview people in three areas – Dundee (Stobswell / Maryfield area), Arbroath, and Grantown-on-Spey. Participants should be:

- Aged 65 years or over
- Retired/ not economically active
- Living independently (not in a residential home or sheltered housing complex)
- A year round resident in one of the case study areas

What will participating in the study involve?

Interviews are expected to last up to 1 hour, but you can request that it be shorter than this or to draw it to a close at any time. The interview can take place either at your home or in a public place (e.g. a café) depending on what you would prefer. You may also ask a friend or relative to be present if you wish. We will audio record the interview if you are willing for us to do so.

How we will use the information you give us

The information you give us will be treated as confidential and will be anonymised so that it cannot be linked to you personally. The findings of the study will be published in a report to the Scottish Government and in an academic journal article.

Getting in touch

If you would like to take part, or have any questions please contact:
Dr Mags Currie (01224 395 297) or Dr Kathryn Colley (01224 395 387)
Or email outandabout@hutton.ac.uk

This research is funded by Scottish Government's Rural and Environmental Science and Analytical Services Division (RESAS) under Theme 8 'Vibrant Rural Communities' of the Food, Land and People Programme (2011-2016).

Appendix D

Interview schedule

A. Background Information

1. Age …….yrs
2. Do you live alone/ with others? If yes, who?
3. What was your occupation if you had one?
4. How long have you lived in the area for?

B. Engagement with the outdoors for recreational purposes

5. How often do your currently get outdoors for recreational purposes?
6. If you do go out how where do you go, who with, and what activities do you do?
7. Would you like to get out more?
8. Have there been times in your life when they you have got into the outdoors more? If so why and what changed?

C. Barriers to getting into the outdoors

9. What would you say are the main reasons that you don't go into the outdoors (more often)?
10. To what extent is your current health and mobility a barrier?
    - Prompts: issues concerns around being outdoors when becoming unwell or falling
11. To what extent do you feel safe and secure when you are out and about in your local area?
    - Prompt: if not feeling safe explore the reasons why
12. To what extent do your established routines limit you going into the outdoors for recreational purposes?
    - Prompts: Other activities/routines and responsibilities (e.g. caring responsibilities, community/volunteering)
13. Do you have people to visit the outdoors with?
    - Prompts: If not, does this stop you going out? If so, who do you go with and are you limited by these people as to how often you can go?
14. Does the weather/light and time of year make a difference to you getting into the outdoors?
15. Does how you feel about your local outdoor spaces affect how often you want to go out?
    - Prompts: perceptions about local green/blue space, environmental barriers – do local recreational resources meet participants' physical, psychological, and social needs? Are they desirable spaces to visit?; how easy is it to access local outdoor recreation spaces?

D. Ways to facilitate outdoor recreation and physical activity

16. Current overall physical activity levels and other (indoor) activities participants engage in? i.e. what do they do and how often
17. What do you think would help you to use outdoors more in future and what would need to change?
18. Would you be interested in taking part in organized activities to get you into the outdoors?
    - Prompts: e.g. health walks groups, walking football, green exercise prescriptions
19. Are you aware of any initiatives like this in your local area, and if interested, what has prevented you from getting involved?

Appendix E

Interview consent form

Project: Barriers to outdoor recreation for older people

In consenting to participate in an interview for the above project I understand that:

1. Taking part in this study is entirely voluntary and I may withdraw my consent at any time prior to the publication of the research findings.
2. It is my right to decline to answer any question that I am asked.
3. I am free to end the interview at any time.
4. I may request that the interview (or parts thereof) not be recorded.
5. My participation is on an anonymous basis. Publications or discussions of the research findings will not reveal any information which would allow me to be identified personally.

Please tick and sign below:

I confirm I have read and understood the information sheet provided

I agree to participate and to the use of my data for the purposes specified

I give permission for an audio recording of the interview to be made

Name (please print): .....

Signature: .....

Date:.....

Signature of researcher: .....

Researcher contact details:

Dr Mags Currie (01224 395 297) or Dr Kathryn Colley (01224 395 387)

outandabout@hutton.ac.uk

The James Hutton Institute, Craigiebuckler, Aberdeen, AB15 8QH

How to access background or source data

The quantitative data collected for this social research publication are available in more detail through statistics.gov.scot.

social research

The views expressed in this report are those of the researcher and do not necessarily represent those of the Scottish Government or Scottish Ministers.

This document is also available from our website at www.gov.scot.
ISBN: 978-1-78652-212-2
ISBN: 978-1-78652-213-9 epub
ISBN: 978-1-78652-214-6 mobi

The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

Produced for
the Scottish Government
by APS Group Scotland
PPDAS68679 (04/16)
Published by the Scottish Government,
April 2016

GSR
GOVERNMENT SOCIAL RESEARCH
Social Science in Government

Social Research series
ISSN 2045 6964
ISBN 978-1-78652-212-2
ISBN 978-1-78652-213-9 epub
ISBN 978-1-78652-214-6 mobi

Web and Print Publication
www.gov.scot/socialresearch

PPDAS68679 (04/16)