

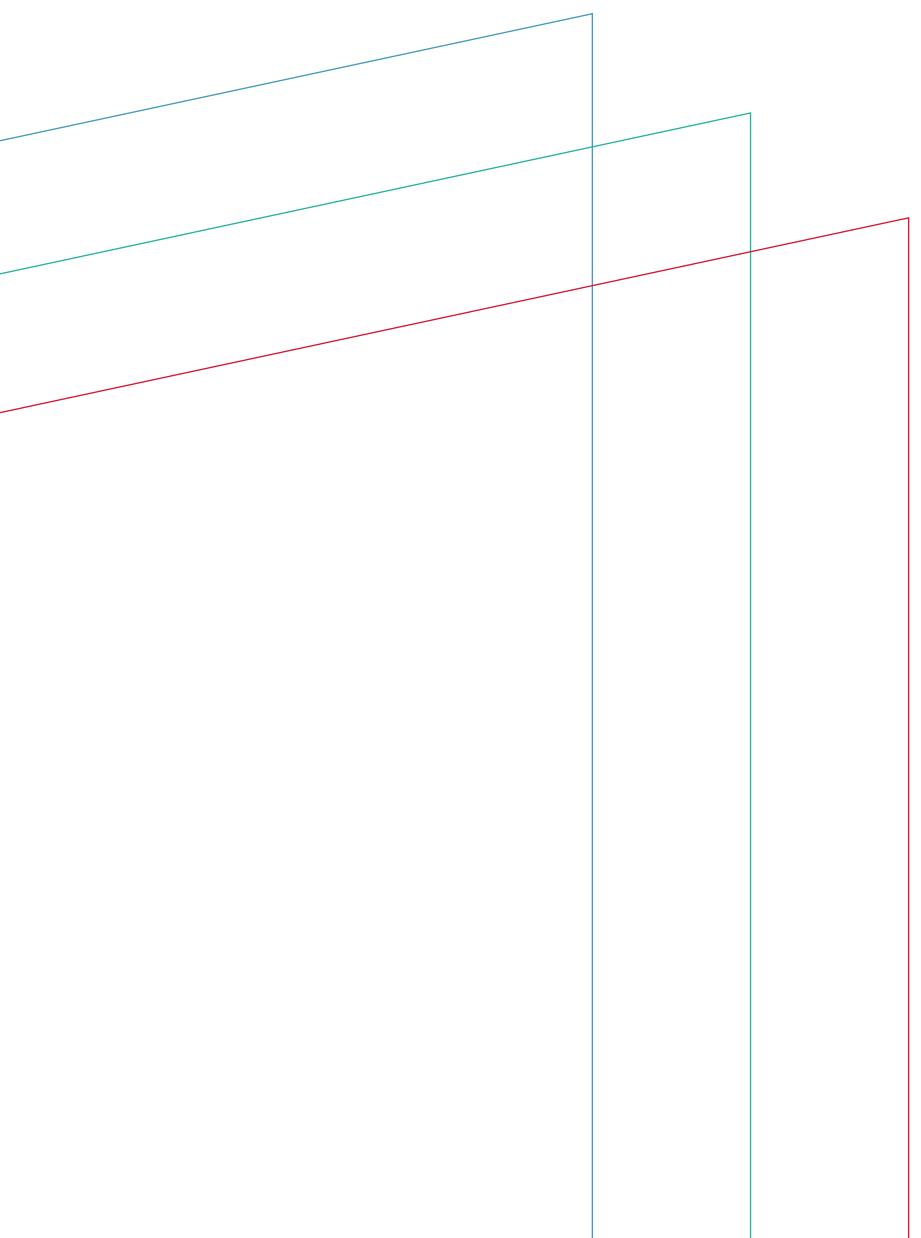


# WHO HAS A PUBLIC RIGHT OF WAY?

AN ANALYSIS OF  
PROVISION AND INEQUITY  
IN ENGLAND AND WALES

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# CONTENTS

<b>EXECUTIVE SUMMARY</b>	<b>2</b>
<b>1. INTRODUCTION</b>	<b>4</b>
<b>2. EXISTING EVIDENCE</b>	<b>6</b>
2.1 WALKING AS A CONDUIT TO NATURE	6
2.2 BENEFITS OF ACCESS TO GREEN SPACES AND NATURE	6
2.3 BENEFITS OF WALKING IN NATURE	7
2.4 UNEQUAL ACCESS TO THE BENEFITS OF WALKING IN NATURE	8
2.5 IMPLICATIONS FOR THIS RESEARCH	8
<b>3. METHODS</b>	<b>10</b>
3.1 ASSEMBLING THE PATH NETWORK MAP	10
3.2 ANALYSIS APPROACH	10
<b>4. THE PUBLIC RIGHT OF WAY NETWORK IN ENGLAND AND WALES</b>	<b>14</b>
<b>5. NEIGHBOURHOOD PROVISION OF PUBLIC RIGHTS OF WAY IN ENGLAND AND WALES</b>	<b>16</b>
5.1 PROW PROVISION IN ENGLAND AND WALES	16
5.2 PROW PROVISION BY HOUSING DEVELOPMENT AGE	17
5.3 PROW PROVISION BY URBAN/RURAL LOCATION	18
5.4 PROW PROVISION VERSUS GREEN SPACE PROVISION	19
5.5 PROW PROVISION BY NATION AND REGION	19
5.6 PROW PROVISION BY LOCAL AUTHORITY	21
<b>6. INTERSECTIONS BETWEEN PUBLIC RIGHTS OF WAY PROVISION, DEMOGRAPHICS, AND DISADVANTAGE</b>	<b>24</b>
6.1 DEPRIVATION INTERSECTIONS	24
6.2 ETHNICITY INTERSECTIONS	25
6.3 AGE INTERSECTIONS	26
6.4 HEALTH INTERSECTIONS	26
<b>7. LOST PUBLIC RIGHTS OF WAY</b>	<b>29</b>
<b>8. PROVISION OF OPEN ACCESS LAND</b>	<b>33</b>
8.1 CONNECTIVITY OF OPEN ACCESS LAND AREAS	34
8.2 NEIGHBOURHOOD CONNECTIVITY WITH OPEN ACCESS LAND	34
8.3 EXPANDING OPEN ACCESS RIGHTS	35
<b>9. PROVISION IN HELD-BACK AREAS</b>	<b>37</b>
<b>10. CONCLUSIONS</b>	<b>39</b>

# EXECUTIVE SUMMARY

A surge in recent research evidences the role regular visits and exposure to nature play in individual and community wellbeing. Focused primarily on public green space and the greenness of public areas, this research has also pointed towards significant inequity in the social distribution of access to nature. But, to date, a vital piece of this puzzle has been missing from the discussion: the role of the path network.

This research breaks new ground in our understanding of the neighbourhood-level provision of paths and the critical infrastructure of nature access. We start from the basics, focusing here on the public rights of way (PRoW) and open access land, which together represent the fundamental mechanisms for legal protection of access to walking in nature across England and Wales. We analyse the provision of this critical infrastructure available within reach of every postcode in England and Wales and, herein, present headline results as well as intersections with other indicators of socioeconomic and demographic status and wellbeing.

We set out to answer the question 'Who has a right of way in England and Wales today?'. The answer, in the simplest of terms, is the old, the wealthy, the healthy, and the white. We evidence significant inequities in provision, which will impact and divide the experiences of everyday community life and interactions with nature of different groups in England and Wales. In addition, we highlight how failures to record, protect, plan, and expand the nature access infrastructure have led to significant losses of potential PRoW to the most deprived and held-back communities. Our findings include:

**PRoW provision is deeply unequal and missing from the communities that need it most.**

- Residents of the least deprived areas of England and Wales see 80% more PRoW provision in their local area than the most deprived.
- Areas in the lowest-levelling-up need category have a median level of PRoW provision 30% higher than those areas most in need.
- This gap widens even further when looking at the ethnicity divide, where the most white-dominated areas have 144% more local PRoW than the most ethnically diverse.
- Every one percentage point increase in an area's white population is associated (ie correlated) with an additional 37m of PRoW within an 800m radius (10 minutes' walk) of a postcode.
- Where health is worst (as indicated by heart attack prevalence) PRoW provision is also lowest.

**We're building walking infrastructure and natural experiences out of people's lives.**

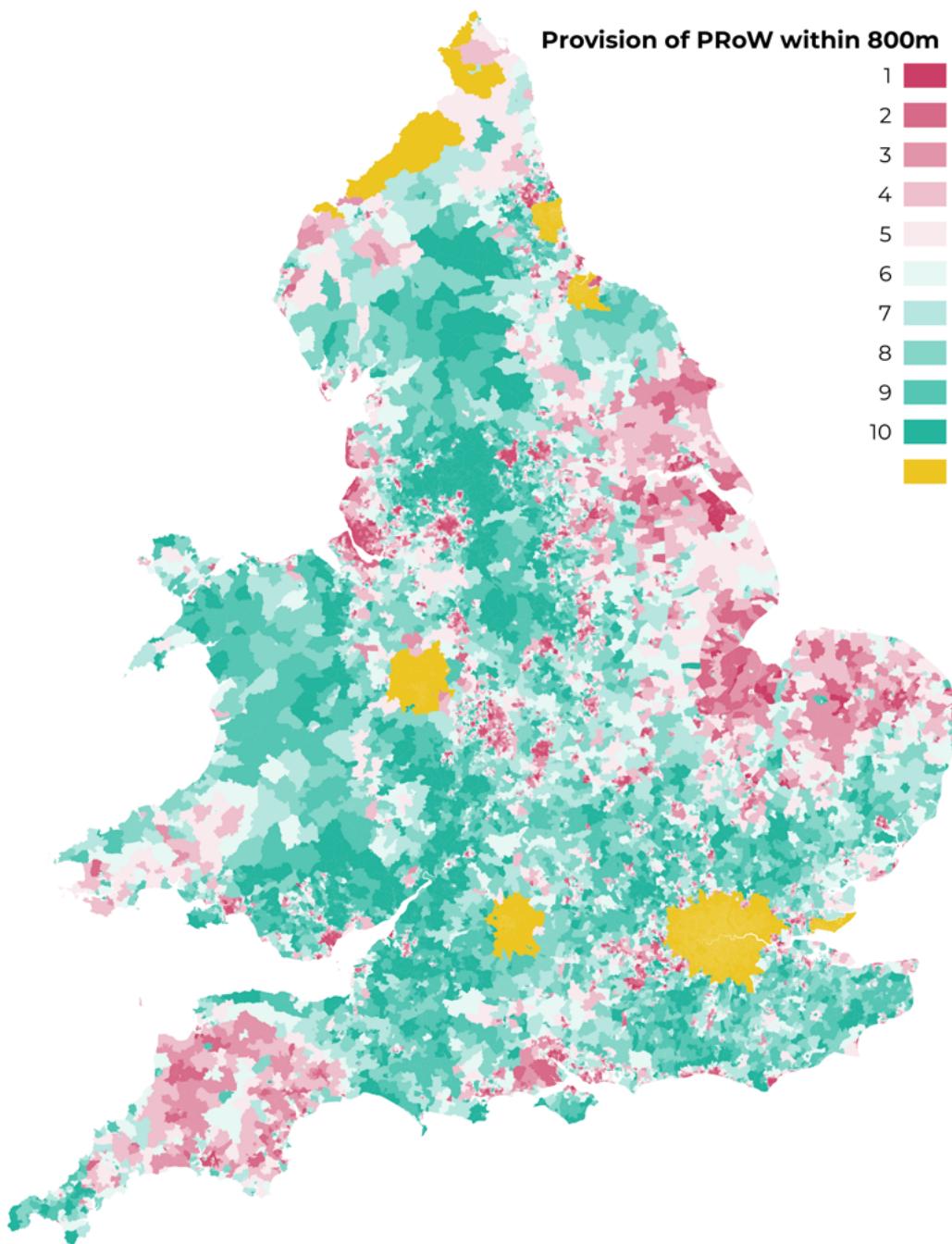
- Neighbourhoods dominated by housing constructed in the mid-twentieth century typically have the highest provision of local PRoW, with housing built between 1965 and 1972 having around 40% more PRoW within an 800m radius than developments built pre-1940 or post-2000.
- A significant drop (-19%) can be seen in PRoW provision between 1990s-dominated developments and post-2000 developments.
- Further, if PRoW had been recorded and protected comprehensively over the past eight decades, communities across England and Wales would have on average 38% more PRoW in their local area than they do now.
- The most deprived communities in England and Wales are missing out on the greatest proportion of PRoW due to these losses and would have around 63% more in their local area today if all PRoW had been accurately registered in legal records in the second half of the twentieth century.

Action is needed to right these inequities and reverse the erosion of this core component of our national critical infrastructure.

1. Legally record what infrastructure we can, protecting and reinstating historic rights of way for future generations.

2. Protect what infrastructure we have, preventing loss to poorly planned development, blockage, or decline into disrepair.
3. Expand infrastructure and target it where we need it most, raising significant investment in new paths and open access land in those communities currently cut off from nature.

**MAP 1: LENGTH OF PUBLIC RIGHT OF WAY WITHIN 800M OF A POSTCODE, GROUPED INTO LOWER LAYER SUPER OUTPUT AREA (LSOA) DECILES. AREAS WITH MISSING DATA ARE SHOWN IN YELLOW, WHERE DECILE 1 (PINK) REPRESENTS THE LOWEST LEVELS OF PROW PROVISION.**



Source: Authors' analysis of local authority public rights of way datasets

# 1. INTRODUCTION

Our network of paths and open access land are critical infrastructures supporting community life in England and Wales, enabling movement, social interaction, connection with nature, and the freedom to walk over parts of our countryside. Despite the methodological challenges it is important to expose the social and environmental value of the network of paths and land enabling access to nature. In the context of wellbeing and ecological crises, understanding the role played by the network and its potential as an instrument through which government might improve social and environmental outcomes for everyone, is vital.

The United Kingdom is deeply unequal, with stark divides both within communities and between different areas. Much of the recent government focus on inequality, their levelling-up agenda, addresses geographical inequality, where striking divides can be seen. A child born today in Blackpool can expect to live 54 years in a good state of health, whereas a child born in Wokingham can look forward to 71 years.<sup>1</sup> The social and policy drivers of this inequity are complex and diverse, but there are clear routes through which the provision of critical infrastructure that enables people to be active in nature might play a role.

Research suggests that the ability of people to engage in physical activity in natural environments drives healthier lives. One study proposes that the regular participation of millions of UK residents in physical activity in natural spaces – primarily walking, which is the most popular physical activity undertaken in green spaces – could add 110,000 healthy life years to the population every year.<sup>2</sup> Yet international comparisons suggest our communities have a comparatively low connection to nature: in one recent study, the UK ranks bottom in a sample of 14 large European nations.<sup>3</sup> This prompts the question of not only whether we are maximising the potential of the paths network, but also what role the network is playing in present societal issues. Also, could the network play a greater role in addressing social inequities across England and Wales?

Recent research has made significant strides in demonstrating the value of access to nature. We also know that access to green space, and the benefits it brings, is unequal across England and Wales, with many poorer communities provided with smaller parks, farther from home and/or of lower quality.<sup>4</sup> The Ramblers' research suggests, for example, that on average only 57% of adults report living within five minutes' walk of a green space; this declines to 46% for households with income lower than £15,000 per year.<sup>5</sup>

In many places, green space provision falls below the standard that UK society has recognised as the minimum for a good quality of life.<sup>6</sup> In many areas, provision levels are also declining over time as a result of a poorly designed planning system weighted towards developer profit instead of healthy lives and ecosystems.<sup>7</sup> However, a vital piece of our understanding of the human-nature relationship is missing – the role of the path network. Our path network not only provides the infrastructure for walking and a healthier life but also creates and fosters the connection between people, nature, and history. Yet levels of provision, inequities in the spatial and social distribution of provision, and trends over time in the provision of paths and access are unknown.

Our knowledge deficit on the role of the path network has arisen in part due to a data deficit. While data on the location of paths in England and Wales is gathered principally by Highway Authorities and the Ordnance Survey, and more recently by online citizen science mapping applications such as OpenStreet Map and others, this data has not been publicly available in a form that enables nationwide analysis of granular neighbourhood-level provision.

A major obstacle to such analysis is the variety in the types of paths found in England and Wales, and their different legal and informal access arrangements. Not all paths across England and Wales form part of the public rights of way (PRoW) network; other classes of paths include a variety of permissive paths, green urban corridors and pathways.

The permissive path network is poorly understood. Even Ordnance Survey does not hold reliable information on the access available on such paths. Permissive paths involve the granting of permission for public use by a land-owning body or individual,

but such permission can be revoked. By contrast, a PRoW is legally protected with a degree of permanence. The public has a right to walk on such routes and, at least in theory, to expect a minimum standard of maintenance of the route. The Highways Act 1980 gives highway authorities the duty “to assert and protect the rights of the public to the use and enjoyment” of paths in their area. They are legally responsible for maintaining the surface of the path, including bridges, and keeping it free of overgrowth. They have the power to require owners to cut back overhanging growth from the side of a path. It also gives them the duty to maintain most such highways to an appropriate standard (apart from a very few highways that are not publicly maintainable).

Management and recording of PRoW is the responsibility of highway authorities, with no central record-keeping system coordinated by the national government. As a result, for decades, some PRoW have been inadequately protected, forgotten, unrecorded, blocked off, and even built over.<sup>8</sup> However, with highway authorities now digitalising their PRoW records, and changes to their PRoW networks, new possibilities are opening up for the analysis of the current provision of PRoW across the country; the role it plays in health, social wellbeing, inequity, access to nature; and the future protection of the network for all.

Alongside the emerging data on PRoW, good quality data is available on open access land. These areas represent places where the general public has a ‘right to roam’, away from the line of public right of way, in law. While many such areas may be difficult to access in practice due to physical obstacles, in theory these represent entire areas of land with a de facto public right to walk and therefore are key parts of England and Wales’ public infrastructure of nature access.

This report breaks new ground in our understanding of the path network in England and Wales. We start from the basics, focusing on understanding what is regarded as the legally sanctioned provision of paths, as represented by the provision of a network of PRoW. Henceforth this is referred to simply as ‘the path network’ and readers should note that, according to the definition set out in Box 1, this does not include everything that the general public may perceive to be a ‘path’, only those paths with the status of a PRoW. We seek to characterise the current provision at a granular, neighbourhood-by-neighbourhood level, analysing paths and open access land provision, how it has changed over time, who it serves, and how it intersects with the geographical distribution of socioeconomic and demographic characteristics.

#### BOX 1: WHAT IS A PUBLIC RIGHT OF WAY?

PRoW are paths that anyone has the legal right to use on foot and a mobility scooter and sometimes using other modes of transport. There are four main designations of PRoW, which are open to different modes of transport:

- **Public footpaths** are open only to walkers, mobility scooters, and powered wheelchairs.
- **Public bridleways** are open to walkers, mobility scooters, powered wheelchairs, horse riders, and pedal cyclists.
- **Restricted byways** are open to walkers, mobility scooters, powered wheelchairs, horse riders, and drivers/riders of non-motorised vehicles (such as horse-drawn carriages and pedal cycles).
- **Byways Open to All Traffic (BOATs)** are open to all classes of traffic including motor vehicles, though they may not be maintained to the same standard as ordinary roads.

Legally, a PRoW is subject to the same protection in law as all other highways, including trunk roads.

PRoW are recorded on the official ‘Definitive Map’. These maps are available for public inspection at the offices of local surveying authorities. The surveying authority may in practice be the same as the highway authority. In single-tier local governments, the council is the highway authority. In two-tier local governments, the county council is the highway authority. Several local authorities exist within the county council’s territory but are not responsible for the Definitive Map and Statement, or other highway matters.

## 2. EXISTING EVIDENCE

The path network in England and Wales is critical infrastructure. It is essential for the functioning of society and the economy and for generating social value through its use, notably its health, wellbeing, and environmental benefits. Uses extend to walking and running, and to a lesser extent cycling and horse riding. Key purposes for these activities include physical health and connecting to nature but also everyday activities such as shopping and commuting.

The physical and mental health benefits of physical activity on the path network are very well established and we do not dedicate significant space to repeating them.<sup>9</sup> Sport England has written extensively, for example, about the health benefits of physical activity and the minimum standards of activity recommended for a healthy life.<sup>10</sup> Despite this, only around two-thirds of UK adults meet the Sport England definition of 'active', which applies to individuals who engage in at least 150+ minutes of activity per week.<sup>11</sup> The deficit in participation arises at least in part because of barriers faced by communities wishing to participate in physical activity. These barriers range from lack of physical infrastructure, infrastructure quality, and lack of services, such as public transport to access this infrastructure, to social and economic barriers.

In this review, we focus more specifically on the intersection between physical activity and nature. We look at the role of the path network as the connection between people, nature, and the ecosystems they share. We also look at what is already known about who in society benefits from the best connectivity and access to nature and who loses out.

### 2.1 WALKING AS A CONDUIT TO NATURE

Walking is the primary conduit to nature. Data in Natural England's People and Nature Survey (Q1–Q3 2021) suggests that walking is the chosen mode of transport for getting to a green and natural space for around two-thirds (64%) of visits. Among residents of the most deprived 20% of England, this figure rises to 66%. When arriving at a green, natural space, walking is the most common activity, reported by 75% of respondents.i,<sup>12</sup>

As movement was restricted by lockdown during the Covid-19 pandemic, people found comfort in nature and walking. Visits to local green spaces and leisure walking more generally increased in frequency – while some people got involved in recreational walking for the first time. Visits to parks and green spaces were already on the rise over recent years, nearly doubling over the last decade.<sup>13</sup> That trend accelerated over the first months of lockdown, with one in three of us visiting local green spaces more often.<sup>14</sup> Across Britain, 74% of people took up some form of exercise, with six in ten women and five in ten men taking up walking – making it the most popular form of lockdown exercise.<sup>15</sup>

### 2.2 BENEFITS OF ACCESS TO GREEN SPACES AND NATURE

The benefits of visiting and building a connection with nature have seen a surge in academic inquiry and evidence in recent years.<sup>16</sup> Much of this has been enabled by the increased availability of higher-quality national statistics. Analysis of Natural England's Monitor of Engagement with the Natural Environment (MENE) survey found that having at least 120 minutes of contact with nature per week led to a significantly higher probability of reporting 'good health and well-being'.<sup>17</sup>

Several studies have been able to link the 'greenness' of a neighbourhood, or time spent within green areas, to beneficial impacts on the prevalence of specific health conditions, such as cardiovascular and respiratory disease,<sup>18</sup> and diabetes.<sup>19</sup> Other studies have linked the provision of increased levels of local green space to better outcomes on indicators of subjective wellbeing, such as happiness and life satisfaction.<sup>20</sup>

i NEF analysis of the Natural England People and Nature Survey.

Through these connections with health and wellbeing, access to green space and nature impacts health inequities in the UK. One study, for example, identifies the quality of, and access to, local green space as a strong predictor of health outcomes in UK Black, Asian, and Minority Ethnic communities. This matters because this demographic grouping experiences the worst baseline health conditions in the UK.<sup>21</sup> Some studies have emphasised the particular significance of green space in more deprived areas as a factor that can mitigate stress levels, reduce health inequities, and improve the sense of belonging of an individual living in a deprived area.<sup>22</sup>

An international literature review identifies this as the ‘protective’ effect of access to green space among more deprived groups, as these groups have “greater dependency on proximate green space” due to their reduced access to other “health promoting resources”.<sup>23</sup> The protective effect of access to green space and its contribution to managing stress levels during traumatic experiences was tested during the recent Covid-19 pandemic. A host of global studies evidence how access to nature, and activity within nature, mitigated the negative wellbeing impacts of the pandemic.<sup>24</sup> One study suggests this effect is larger in magnitude for women compared to men.<sup>25</sup>

Not all green spaces are made equal. Studies suggest that the quality of the green space on offer is an important factor in the degree of stress reduction provided by a visit.<sup>26</sup> Some studies have presented evidence suggesting that the greater the biodiversity of a green space, the greater the mental health benefits that can be provided.<sup>27</sup> Research identifies the ‘attractiveness’ of a natural open space as being of primary importance to encouraging physical activity.

Studies suggest that the amenity value of a green space, and specifically the presence of paths, can be of greater importance in determining usage rates than the space’s distance from a person’s residence or the size of the green space.<sup>28, 29</sup> This is caveated, of course, by the proviso that the space must nonetheless be accessible, and within a ‘reasonable’ distance to be used. Studies show the greenness of an environment typically increases an individual’s desire to spend time in it. The path network can be both an enabler and a continuation of this, expanding and narrowing the green experience.

Experiences of ‘green’ do not necessarily end at the boundary of a formally designated green space, and it is fundamental that we protect, improve, and expand the path network to ensure everyone, everywhere can receive the benefits of access to green spaces and nature closer to home.

### 2.3 BENEFITS OF WALKING IN NATURE

While walking has well-known health benefits, the characteristics of a walk matter to the type and extent of benefits that individuals receive. One study suggests that walks in farmland and green corridors can outperform walks in urban, non-natural environments in terms of their ability to positively impact perceived stress and emotional wellbeing.<sup>30</sup> Another study specifically distinguishes walking within nature as having greater benefits than viewing nature or walking in spaces lacking natural elements, in relation to its mental health impact.<sup>31</sup> While the routes through which these benefits manifest are complex, studies have linked walking in nature to reduced rates of ‘rumination’ or ‘brooding’ (repetitive thought focused on negative aspects of the self) and can measure this impact at a neurobiological level.<sup>32</sup> These studies attempt to constrain different types, or categories, of the physical environment. In reality, the ‘naturalness’ of a space comes in varying degrees and can be measured in different ways.

The naturalness of a walking route can also play a key role in incentivising community uptake. While the distance to retail and service destinations has been found to be a critical factor determining engagement in walking, issues such as the perceived quality of the recreational destination, and the attractiveness of the route itself are also found to be key.<sup>33</sup>

There is some research focusing specifically on the issue of long-distance walking and showing its benefits as a mitigator of depression and anxiety. While the research does delineate some benefits of long- versus short-distance walking, such as the benefits of contemplative space provided by long walks, it would be premature to suggest that one is better than the other.<sup>34</sup> Short-distance walking also has many positive impacts on aspects of mental wellbeing<sup>35</sup> and is particularly relevant when it comes to engaging infrequent users or the most inactive of society.

## 2.4 UNEQUAL ACCESS TO THE BENEFITS OF WALKING IN NATURE

Despite the well-evidenced link between access to nature and population health, just over half of adults in England do not visit natural spaces at least once per week.<sup>ii</sup> Research into the equity of access to the benefits provided by physical activity and engagement with nature encompasses a large and complex body of work exploring social, economic, and physical barriers. Green space is one element of this issue that is better studied. One large-scale study summarised what we know about green space inequities as:

[I]nfrequent users were more likely to be; female, older, in poor health, of lower socioeconomic status, of ethnic minority status, live in relatively deprived areas with less neighbourhood greenspace and be further from the coast.<sup>36</sup>

NEF's analysis shows that provision of green space matters and is a significant and material factor in determining usage rates.<sup>37</sup> NEF's research shows the decline in green space provision seen in more recent housing developments is statistically correlated with a decline in the green space visitation rates of the residents, even after controlling for other key factors influencing visitation rates. It follows, therefore, that the unequal rates of provision of green space reported at the national level by the Ramblers, Fields in Trust, and others,<sup>38, 39</sup> and in localised case studies in Sheffield<sup>40</sup> and Bradford,<sup>41</sup> which is to the detriment of poorer and ethnic minority groups, will drive inequality in access to nature.

The role played by the path network, its distribution and equity, and resulting impacts of access to nature, however, is far less studied. It is conceivable, indeed, that the path network is of equal or greater importance to society's physical activity in nature than the formally recognised public green space provision.

Some features of what we know about walking, in general, might inform analyses of paths and open access land. Walking as a means of active travel is more common in poorer areas where access to cars is lower.<sup>42</sup> Some survey data suggests that this trend reverses in older age when individuals from high deprivation areas walk less than individuals

from low deprivation areas.<sup>43</sup> This disparity has been partially linked to the safety, quietness, and aesthetic of the walking environment as well as the maintenance and quality of the pedestrian infrastructure itself.<sup>44</sup>

However, while there is a reasonable body of qualitative studies exploring subjective barriers to walking, particularly as a form of active travel, in general the studies in question tend not to explicitly explore the role of overall levels and locations of open access land and paths provision and inequities therein between groups and places. Less research still, looks at inequities in paths and access provision specifically concerning walking in nature. One such study was identified looking at the issue of coastal access in California.<sup>45</sup> The research highlights the significant access advantage held by older, wealthier, white residents over other groupings in the area. No such studies were identified looking at the regional or national paths and access provision in the United Kingdom other than some initial scoping studies limited to the evaluation of the use of the England Coast Path.<sup>46</sup>

Where some research is available is in the quantification of the value of paths and access networks in the UK. These studies typically investigate at the case study level, and many seek to quantify the value of a path or parcel of open access land in economic terms.<sup>47</sup> These case studies, such as ones from Bedfordshire<sup>48</sup> and the Chilterns,<sup>49</sup> commonly show the strong economic case for expenditure and maintenance of public rights of way (PROW) and open access land from the perspective of the social value generated. The equity of access, or by proxy the equity of social value created by paths and open access land, is less explored.

## 2.5 IMPLICATIONS FOR THIS RESEARCH

Social issues of economics, deprivation, and discrimination play a major role in influencing the ways and extent to which people engage with nature. At times this will, rightly, move the public policy conversation away from issues of physical infrastructure provision. However, the path network is a critical infrastructure and also plays a key role in determining rates of engagement with nature. Without provision, there can be no usage.

<sup>ii</sup> NEF analysis of the Monitor of Engagement with the Natural Environment Survey, 2009-2019.

Given this context, it is surprising that the current provision levels are relatively under-researched and under-represented in the public policy conversation.

The extent to which the provision of the infrastructure of walking has changed over recent decades is largely unknown and understudied at larger spatial scales. Indeed, the current levels of provision of PRoW at the neighbourhood level are not well characterised, and the connection this has with usage rates is not understood. Major changes to the path and access network have been seen in recent decades, most notably the Countryside and Rights of Way Act of 2000, which provided the 'right to roam' on many upland areas; the 870-mile-long Wales Coast Path, which was launched in 2012; and the Marine and Coastal Access Act of 2009, which led to the creation of the England Coast Path. These developments may have enhanced paths and access provision across the nations; nonetheless, in broad terms, the provision of paths and open access land in England and Wales remains poorly understood.

This research focuses on characterising the provision of paths and access across England and Wales. Scotland has notably different legal paths and access contexts and cannot be directly compared with English and Welsh data and therefore is excluded from this analysis. This analysis represents the first foray into the macro-scale characterisation of the walking network. To simplify the process we begin by analysing only the legally recognised paths and access infrastructure. Specifically, PRoW and open access land. This approach follows the most recent analyses of green space provision, which focus on legally recognised public green space and ignore incidental or privately provided green spaces.

## 3. METHODS

### 3.1 ASSEMBLING THE PATH NETWORK MAP

At present, the public can only gain access to current public rights of way (PRoW) definitive maps directly from the relevant local authority, with varying levels of difficulty. Citizen science projects, notably the [rowmaps.com](http://rowmaps.com) website administered by Barry Cornelius, have made significant progress collating PRoW maps supplied by local authorities, with a running total of 121 authorities (at varying local authority administrative levels) providing open-licence data. However, having accessed these datasets, a significant number of local authority maps remained missing from the project database. The Ramblers and ASTUN Technology set about contacting those missing local authorities in England and Wales. This data drive was successful in collecting digitalised maps from a further 18 authorities. Following this initiative, the project database contained PRoW maps for 308 out of 346 local authority districts.

The missing 38 local authority districts were concentrated in London. Inner London boroughs are not legally required to hold definitive PRoW maps and as such would always present an anomaly in the national dataset. The remaining five local authorities outside London where publicly accessible data was not available were Middlesbrough, Telford and Wrekin, Southend-on-Sea, Sunderland, and Swindon. These local authorities were contacted as part of the research but did not respond during the timeframe of the report. A small number of outer London boroughs did provide their PRoW data on request; however, as these were unevenly distributed and constituted 'islands' surrounded by missing data, the decision was taken to exclude all of greater London from the analysis. As a result, this analysis utilises a PRoW map that covers 98.5% of the land surface area of England and Wales but only 81.8% of the population of England and Wales.

In all subsequent analyses, missing local authorities are removed. All results should be read as 'PRoW provision excluding London and five English local authorities'.

Data on the provision of open access land in England and Wales was gathered from government sources. Our open access land map includes open access land classified under sections 4 (open country), 15 (land with access under other enactments), and 16 (dedicated land) of the Countryside and Rights of Way (CroW) Act 2000. We do not include open access land associated with the coastal margin, as designated in the Marine and Coastal Access Act 2009. Large sections of the coastal path are already captured as PRoW in our PRoW dataset and large parcels of land within the coastal margin are excluded from open access rights.

### 3.2 ANALYSIS APPROACH

This report begins with an overview of the length of PRoW in our dataset, and a characterisation of that PRoW in terms of the landscapes within which it is found. The construction of a near-complete national digital map of the PRoW and open access land network opens up new avenues for analysing provision at the neighbourhood level. The remainder of the report concentrates on a more people, community, or place-based approach to assessing provision.

To enable cross-comparison and integrated analysis, we needed to analyse the network using the spatial units where other demographic, social, and economic data are collected. To analyse correlation, with the future hope of proving causation between social factors and PRoW and open access land provision, we also needed to analyse at the most localised available scales. The smallest data collection unit utilised in UK national statistics is the Lower Layer Super Output Area (LSOA) unit, designed for the analysis of the UK census. Each LSOA has a population in the range of 1,500–2,500 people. The geographical size of each LSOA varies to maintain the population at an approximately consistent level. The average size of an LSOA is around 400 hectares. In the analysis that follows, LSOAs are referred to as neighbourhoods.

We aimed to describe the provision of PRoW and open access land experienced by the population of each LSOA. As population density can vary significantly within each LSOA, with some LSOAs spanning both rural areas and urban conurbations the most accurate way to capture

household experiences was to base our analysis of the PRoW and open access land network around the location of postcodes within each LSOA. Postcodes represent an even more granular measure of the approximate location of households. Measuring from the centre of each postcode we then undertook a map-based analysis to calculate a series of descriptive indicators of PRoW and open access land provision. This method emulates a method utilised by the Office for National Statistics (ONS) and the Ordnance Survey in their efforts to characterise neighbourhood-level provision of green space across Great Britain.<sup>50</sup> The ONS Access to Public Parks and Playing Fields, Great Britain, April 2020 dataset contains data on greenspace provision for 34,485 England and Wales LSOAs out of 34,758 total LSOAs in the two nations. A total of 273 LSOAs are missing from the dataset; it is not clear why this is the case.

Map-based analysis on the PRoW and open access land network was undertaken by ASTUN Technology in QGIS open-source mapping software. We measured PRoW provision within a

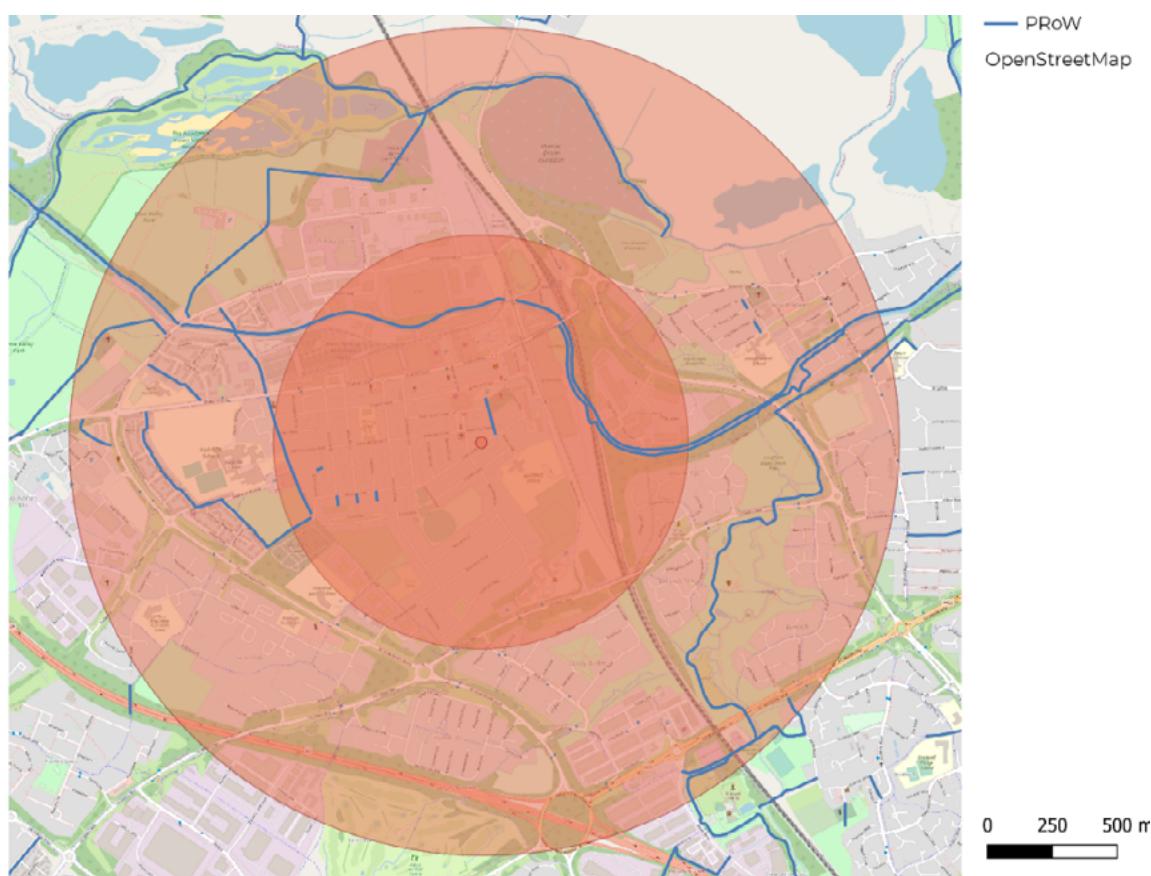
certain radius (sometimes referred to as a buffer) of each postcode, and the distance from a postcode to a parcel of open access land. We then derived average levels of provision per LSOA. The chosen buffer zones, or radii, for the assessment of PRoW provision were 400m, 800m, 1,600m, and 3,200m. These were selected as widely accepted measures of reasonable walking distances when assessing a range of different journey purposes.<sup>51</sup>

Average journey times by distance:

- 400m = 5 minutes' walk
- 800m = 10 minutes' walk
- 1,200m = 15 minutes' walk
- 1,600m = 20 minutes' walk
- 3,200m = 40 minutes' walk

An illustration of this analysis approach is shown in Map 2.

**MAP 2: ILLUSTRATIVE 800M AND 1,600M RADIUS CIRCLES AROUND A POSTCODE,  
ENCOMPASSING PRoW ROUTES OF DIFFERENT LENGTHS IN WOLVERTON, MILTON KEYNES**



In some instances, placing a buffer around a postcode centroid would result in the buffer area intersecting with a local authority for which no PRoW data was available. For example, it would not be possible to calculate provision at a 1,600m radius for postcode centroids within 1,000m of the boundary of Greater London. Any such centroid is excluded from the analysis and as such, data from local authorities in these areas is subject to greater uncertainty. However, particularly as most boundaries affected by this issue are rural, this uncertainty affects a very small proportion of postcodes and has a very low impact on the overall findings of the research.

The indicators developed were designed to capture as much information about the neighbourhood-level provision of PRoW as possible. The five broad indicator classes are as follows:

1. The length of PRoW in the local area.
2. The provision of continuous PRoW of a minimum of 3km in length in the local area.
3. The 'greenness', as measured in satellite imagery, of PRoW in the local area.
4. The provision of PRoW passing next to, or through, nature-rich areas (as defined by Natural England).
5. The provision of open access land (ie land where the public has a right of open access) in the local area.

Full details of the indicators developed are shown in Table 1. The potential scope of analysis with these indicators is very significant. Only a limited set of data permutations and insights are reported herein. Investigations will continue beyond the remit of this report.

**TABLE 1: FULL DESCRIPTION OF INDICATORS DEVELOPED**

No.	Variant	Description	Methodology notes
<b>1</b>	800m buffer	Aggregate length of PRoW within the buffer distance from each postcode, averaged to LSOA level.	
	1,600m buffer		
<b>2</b>	800m	Total length of continuous PRoW of 3km or more intersecting the buffer.	PRoW separated by a gap of 30m or less are designated as continuous.
	1,600m		
<b>3</b>	No buffer	Distance to the nearest continuous PRoW of 3km or more in length.	
	400m buffer	Yes/no indicator of whether the average distance to a PRoW of 3km or more in length is less than 400m.	
<b>4a</b>	800m buffer	Aggregate length of PRoW within the buffer distance from each postcode, weighted by the greenness of that PRoW, averaged to LSOA level.	The Natural England greenness layer operates with a 250m grid, as such, the buffer distance used here includes PRoW within any 250m grid cells intersecting the buffer. Necessarily, therefore, the buffer used in the greenness analysis will be slightly larger than that used in indicators 1 and 2. As such, indicator 4b captures, in essence, the same information as indicator 1, using the buffer zone created by the 250m grid cells. This marginally, but not significantly, increase the error associated with the assessment of PRoW greenness.
	1,600m buffer		
<b>4b</b>	800m buffer	Aggregate length of PRoW within the buffer distance from each postcode, averaged to LSOA level.	
	1,600m buffer		
<b>4c</b>	800m buffer	Percentage greenness of the PRoW within the buffer distance from each postcode, averaged to LSOA level.	
	1,600m buffer		
<b>5</b>	800m buffer	Length of PRoW within the buffer distance from each postcode with a greenness of 80% or higher, averaged to LSOA level.	
	1,600m buffer		
<b>6</b>	3,200m buffer	Length of PRoW within the buffer distance, which is within, or next to, a nature-rich site using the Natural England biodiversity layer.	Natural England includes Sites of Special Scientific Interest (SSSIs), national nature reserves, local nature reserves, and ancient woodland. PRoW located inside, or within 20m of such sites, are identified.
<b>10</b>	Minimum 1ha in size	Distance from postcode to the nearest parcel of open access land of a minimum 1ha in size.	Open access land parcels within 10m of each other are aggregated and treated as a single access land parcel.
	Minimum 5ha in size and with a PRoW connection	Distance from postcode to the nearest parcel of open access land of a minimum 5ha in size and intersected by at least one PRoW.	

## 4. THE PUBLIC RIGHT OF WAY NETWORK IN ENGLAND AND WALES

Our dataset contains 223,176km of public right of way (PRoW), of which 83% is found in England and 17% in Wales. Of this, 88.6% is located within land defined as 'agricultural' by the Department for Environment, Food and Rural Affairs (Defra) (Table 2). However, agricultural land is found within many other area designations, notably Areas of Outstanding Natural Beauty (AONBs), and National Parks. These represent 15% and 11% of all PRoW respectively, as AONBs and National Parks are mutually exclusive land designations; this means just over a quarter of all PRoW is found within one designation or the other.

National Parks are administered by public bodies with planning powers and are required to maintain levels of recreational access. AONBs are protected, but responsible bodies do not have planning powers (which remain with the local authority), and the facilitation of recreational activity is not

mandated by law. Defra also documents 'local' and 'national' nature reserves, but just 1% of PRoW is located within these designations.

A further classification, which is not mutually exclusive with any of these designations, is woodland. Around 13% of PRoW is found within woodland; this value is similar to the overall woodland land cover of the UK (also 13%), slightly higher than the cover in England (10%) and slightly lower than in Wales (15%). Broadly, however, this suggests that PRoW distribution across England and Wales is not biased towards or against woodland areas.

While the large majority of PRoW is found in rural areas, just 20% of the population of England and around one-third of the population of Wales (depending on the methodology used) live in rural areas.<sup>52</sup> As such, the PRoW available in the immediate vicinity of a city is particularly relevant. Across England and Wales, 14.5% of PRoW is located in the urban fringe (defined as a 1km boundary around the urban area). In England, some 17.2% of PRoW are located within the Greenbelt, another identifier of the urban periphery.

The Ramblers *Don't Lose Your Way* project identified around 78,000km of PRoW, shown on early twentieth-century maps but no longer listed on modern PRoW maps and databases. These routes are not factored into this analysis but are discussed in subsequent sections.

**TABLE 2: BREAKDOWN OF THE LANDSCAPE TYPES IN WHICH PRoW IS LOCATED IN ENGLAND AND WALES.**

The data shown is not mutually exclusive, for instance, woodland is found within land designated as agricultural and therefore woodland and agricultural proportions sum to more than one.

Ecotype	Description and source	England and Wales length (km)	England and Wales proportion	England length (km)	England proportion	Wales length (km)	Wales proportion
<b>Agricultural</b>	PRoW located within all agricultural land classes in the Defra framework.	197,708	88.59%	168,179	90.60%	29,530	80.62%
<b>Woodland</b>	Length of PRoW located within all classes of woodland in the Forestry Commission inventory.	30,116	13.49%				
<b>Greenbelt</b>	All PRoW located within greenbelt land as classified by the Ministry of Housing, Communities and Local Government.			31,975	17.23%		
<b>Urban fringe</b>	All PRoW located within 1km of the boundary of urban land as classified by Defra.	32,454	14.54%				
<b>Areas of Outstanding Natural Beauty</b>	All PRoW located within an AONB as classified by Defra.	33,964	15.22%	31,550	17.00%	2,414	6.59%
<b>National parks</b>	All PRoW located within a national park as classified by Defra.	24,382	10.92%	17,867	9.63%	6,515	17.79%
<b>Local nature reserves</b>	All PRoW located within land designated as a 'local nature reserve' by Defra.	1,330	0.60%	1,252	0.67%	78	0.21%
<b>National nature reserves</b>	All PRoW located within land designated as a 'national nature reserve' by Defra.	916	0.41%	803	0.43%	113	0.31%
<b>Lakeside and reservoir-side</b>	All PRoW located within 5m of a lake or reservoir.	219	0.10%				
<b>All PRoW</b>	<b>All PRoW</b>	<b>223,176</b>		<b>185,620</b>	<b>83.17%</b>	<b>36,627</b>	<b>16.41%</b>

## 5. NEIGHBOURHOOD PROVISION OF PUBLIC RIGHTS OF WAY IN ENGLAND AND WALES

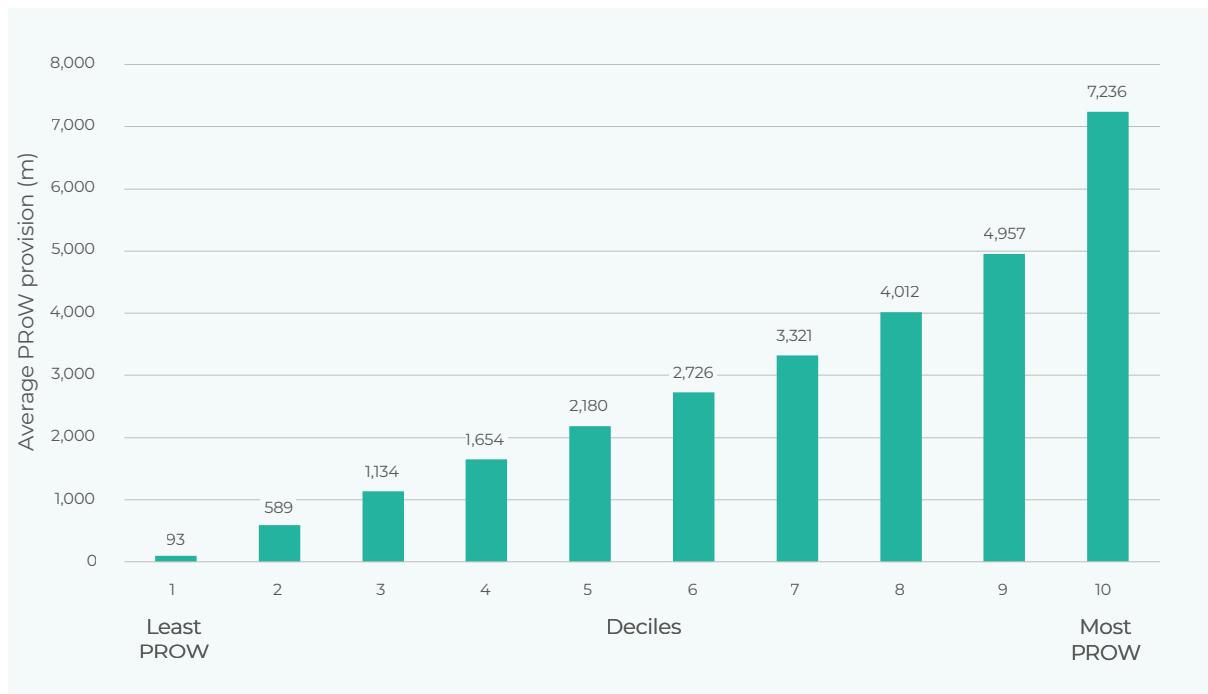
The following section describes the public rights of way (PRoW) network of England and Wales as captured in the new set of indicators of neighbourhood-level provision. At various points, the Lower Layer Super Output Area (LSOA) level data is cross-tabulated with other datasets available at the LSOA level to allow further interpretation of the results.

### 5.1 PRoW PROVISION IN ENGLAND AND WALES

The average household in England has an average (mean) of 2.7km of PRoW within an 800m radius. The comparable figure for Wales is 28% higher at 3.5km. The median length of PRoW within reach is typically around 13% lower than the mean in England and 6% lower in Wales. In both cases, the data is skewed by a subset of neighbourhoods with very high PRoW provision. This is illustrated in Figure 1, which breaks down PRoW provision within 800m into deciles. A large jump can be seen between the 9th and 10th best-served deciles, equivalent to a rise of 46% in the average provision of PRoW.

The majority (over 80%) of households are also within easy reach of a PRoW of 3km or more in a continuous length (Table 3). The median distance to a 3km+ continuous PRoW is 165m in England and 137m in Wales. In this case, the median distance is lower, or closer to home, than the mean; this is because the mean distance from PRoW is skewed by a small number of postcodes which are a very long way from a PRoW.

**FIGURE 1: AVERAGE PROVISION OF PRoW WITHIN AN 800M RADIUS OF A POSTCODE ACROSS ENGLAND AND WALES, GROUPED INTO DECILES**



Source: Authors' analysis

**TABLE 3: DESCRIPTIVE STATISTICS ON FOUR CORE INDICATORS OF PRoW PROVISION IN ENGLAND AND WALES**

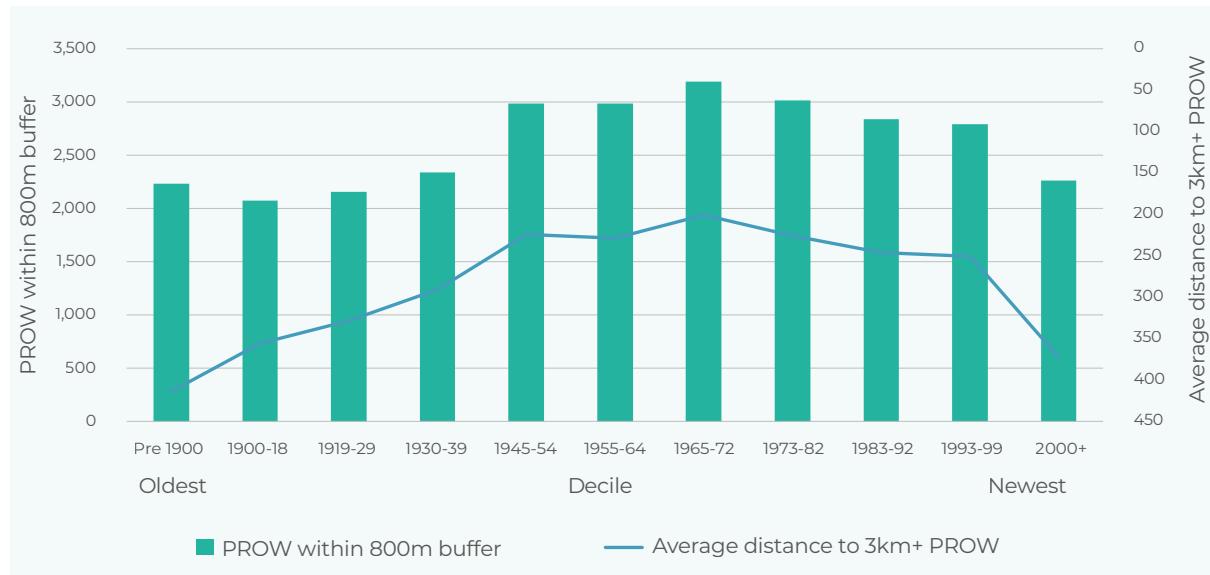
Indicator description	Buffer distance	England average (m)	England Median (m)	Wales average (m)	Wales Median (m)
Length of PRoW within buffer	800m	2,739	2,394	3,507	3,283
Length of PRoW within buffer	1,600m	11,214	10,308	14,011	13,148
Distance to nearest PRoW of 3km continuous length	N/A	259	165	240	137
Description	Buffer distance	England		Wales	
Proportion of neighbourhoods with a PRoW of 3km continuous length intersecting buffer	400m			83.42%	
				86.75%	

## 5.2 PRoW PROVISION BY HOUSING DEVELOPMENT AGE

Evidence collated by the Ramblers on PRoW that have been lost from maps since the early twentieth century, which includes many PRoW routes that have now been built over, suggests there may have been a long-term decline in PRoW provision. Data on lost rights of way is analysed later in this report. Another way to look at how PRoW provision varies across the country, and by proxy how it may have varied over time, is to look at the PRoW provision across different housing development age groups. Our dataset can be combined with data from the Valuation Office Agency (VOA) collated by Datadaptive on the median age of the housing stock found within each LSOA. This allows assessment of the provision of PRoW across different neighbourhood age classes.

As shown in Figure 2, neighbourhoods dominated by housing constructed in the mid-twentieth century typically have the highest provision of local PRoW. Indeed this variation is significant, with neighbourhoods dominated by housing built between 1965 and 1972 typically having around 40% more PRoW within an 800m radius than developments built pre-1940, or post-2000. A significant drop (-19%) can be seen in PRoW provision between 1990s-dominated developments and post-2000 developments. This may in part relate to shifts in the types of localities preferred for development in post-2000 projects towards areas without strong pre-existing PRoW provision, but nonetheless, it implies a failure to integrate new PRoW provision into new developments at a level that would equal the level of provision available to mid-twentieth-century projects.

**FIGURE 2: AVERAGE PROVISION OF PROW WITHIN AN 800M BUFFER AND DISTANCE TO PROW OF 3KM+ CONTINUOUS LENGTH, SPLIT BY THE MEDIAN AGE OF NEIGHBOURHOOD HOUSING STOCK**



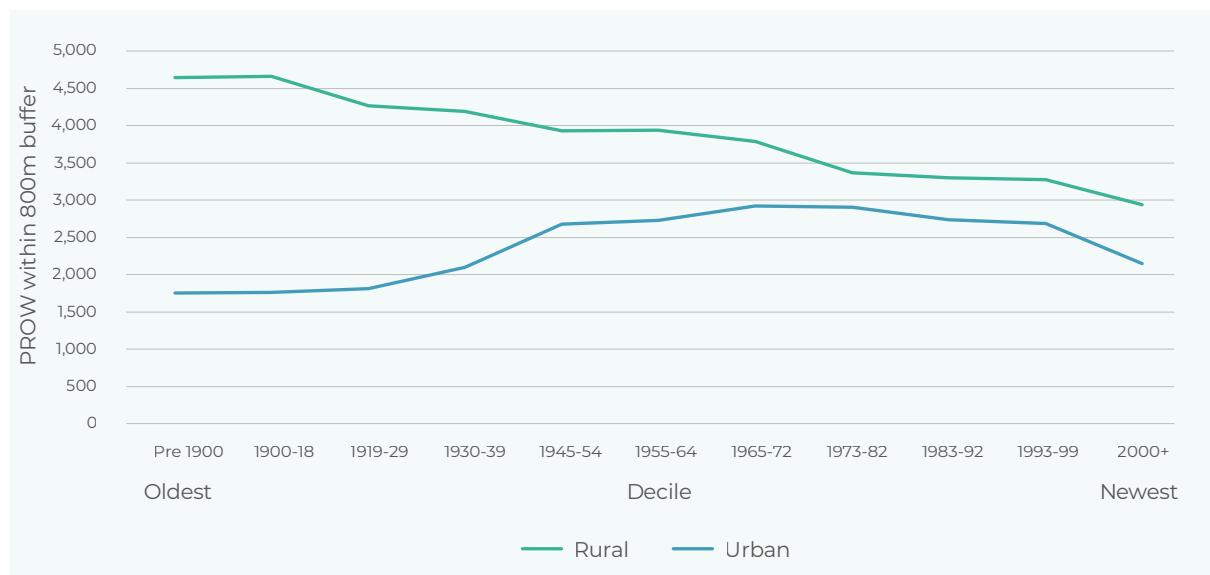
Source: Authors' analysis and VOA data collated by Datadaptive

### 5.3 PROW PROVISION BY URBAN/RURAL LOCATION

Provision of PRoW has a very strong rural/urban divide. Combining our indicator dataset with the ONS rural/urban classification, as shown in Figure 3, highlights that rural neighbourhoods have considerably more PRoW within an 800m radius. While urban areas are likely to be better served by non-PRoW designated paths, particularly footways, which are ways set aside for pedestrians at the edge of the carriageway, better known as pavements. This

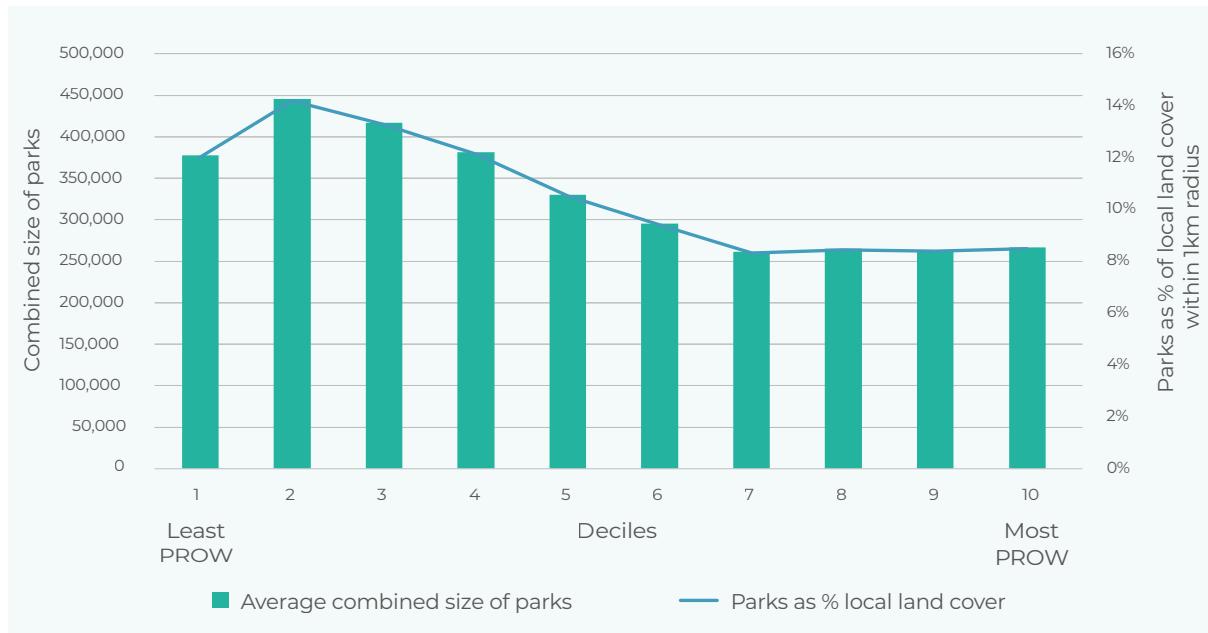
gap, however, varies significantly depending on the dominant housing age class. Rural neighbourhoods dominated by early and pre-twentieth-century housing have considerably higher levels of PRoW provision than all other classes. Throughout the mid to late twentieth century, the rural/urban divide narrows as provision in urban neighbourhoods rises. Further research is required to fully interpret these findings, but there are early indications here that twenty-first-century local development plans are failing to adequately integrate PRoW.

**FIGURE 3: AVERAGE PROVISION OF PROW WITHIN AN 800M BUFFER SPLIT BY MEDIAN AGE OF NEIGHBOURHOOD HOUSING STOCK AND RURAL/URBAN LOCATION**



Source: Authors' analysis, ONS, and VOA data collated by Datadaptive

**FIGURE 4: COMBINED SIZE OF PARKS WITHIN 1,000M OF A POSTCODE (ONS) GROUPED ACCORDING TO LEVELS OF PROW PROVISION WITHIN AN 800M BUFFER (DECILES) FOR ENGLAND AND WALES, AND PARK AREA AS A PERCENTAGE OF LOCAL LAND COVER WITHIN A 1KM RADIUS**



Source: Authors' analysis and ONS

#### 5.4 PROW PROVISION VERSUS GREEN SPACE PROVISION

A key area of interest is the relationship between PRoW provision and green space provision, and the extent to which the two occur as complements or substitutes. Can PRoW provision compensate for inadequate green space provision? By combining our indicator dataset with ONS data on the provision of public green space we can analyse the trend.<sup>iii</sup> As shown in Figure 4, areas with lower levels of PRoW provision typically show higher levels of green space provision. Based on the data presented herein, a suspected cause of this is that PRoW provision is low in highly urbanised settings, yet some of the largest public green spaces are found in urban settings. If PRoW can play a role as a conduit to nature through its green and natural design, this suggests PRoW may have a compensatory effect in areas with low green space access.

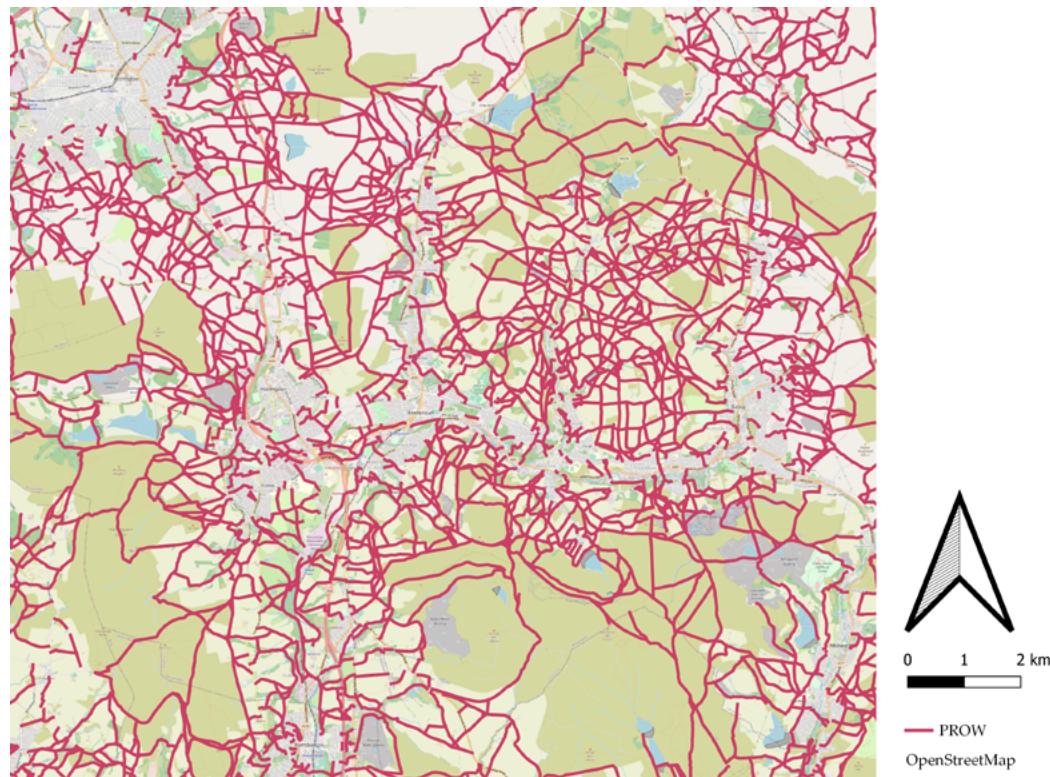
#### 5.5 PROW PROVISION BY NATION AND REGION

PRoW provision varies significantly by nation and region (Table 4). Wales has the highest levels of neighbourhood PRoW provision, both in terms of local length and proximity to a 3km+ continuous PRoW, closely followed by the South West of England. PRoW provision within an 800m radius is typically over 30% higher in these areas than in the worst-served regions, the West Midlands and North West. Access to longer sections (3km+) of PRoW varies slightly differently. Yorkshire and the Humber and the North East, along with the North West, show some of the lowest levels of provision with over 22% of neighbourhoods being farther than 400m away from a long continuous PRoW. In these areas, urban populations are notably farther from the regions' longer PRoW routes.

iii NEF analysis of ONS (2020) Access to gardens and public green space in Great Britain.

**TABLE 4: DESCRIPTIVE STATISTICS ON FOUR INDICATORS OF PROW PROVISION,  
BROKEN DOWN BY REGION/NATION**

Region/nation	Length of PRow within 800m buffer	Length of PRow within 1,600m buffer	Distance to nearest PRow of 3km continuous length	Proportion of neighbourhoods with a PRow of 3km continuous length intersecting 400m buffer
Wales	3,507	14,011	240	86.75%
South West	3,382	13,044	208	89.62%
South East	2,783	11,301	215	88.00%
Yorkshire and the Humber	2,737	11,533	310	77.48%
North East	2,661	10,865	297	76.64%
East Midlands	2,639	10,585	240	85.72%
East of England	2,636	10,666	253	84.07%
West Midlands	2,555	10,371	226	87.47%
North West	2,540	11,124	338	75.14%

**MAP 3: PROW PROVISION IN THE VICINITY OF ROSENDALE LOCAL AUTHORITY, RED LINES DENOTE PROW ROUTES IN THE LOCAL INVENTORY**

## 5.6 PRoW PROVISION BY LOCAL AUTHORITY

Even greater levels of variability in PRoW provision can be seen when analysing at the local authority level. Rural authorities such as Rossendale, Monmouthshire, and High Peak dominate the list of the top ten local authorities by PRoW provision.

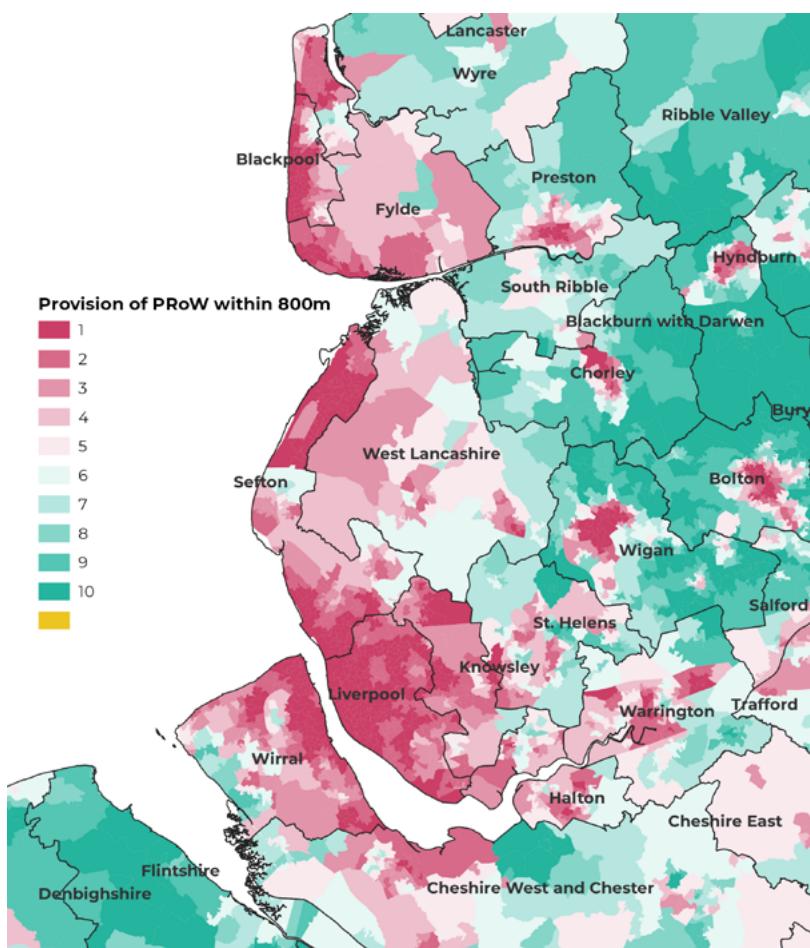
Burnley and South Tyneside stand out as unusual, as fairly urban authorities with very high PRoW provision (Table 5). On closer inspection, in the South Tyneside case, this relates to an unusual tendency for very short footpaths providing interconnections within housing estates to be

designated as PRoW where in most other locations they would not. In Burnley, however, the high ranking appears justified. The authority seems particularly well supplied with longer, off-road PRoW leisure routes, many of which follow the banks of local rivers, brooks, and canals.

Urban areas dominate the list of the worst provisioned local authorities in England and Wales. PRoW are largely absent from Norwich, Liverpool, Southampton, and the urbanised areas of North East Lincolnshire in particular.

**TABLE 5: DESCRIPTIVE STATISTICS ON FOUR INDICATORS OF NEIGHBOURHOOD-LEVEL PRoW PROVISION, TOP TEN LOCAL AUTHORITIES**

	Local authority	Length of PRoW within 800m buffer	Length of PRoW within 1,600m buffer	Distance to nearest PRoW of 3km continuous length	Proportion of neighbourhoods with a PRoW of 3km continuous length intersecting 400m buffer
1	Rossendale	9,232	40,577	76	100.00%
2	Stroud	7,564	30,343	67	100.00%
3	Monmouthshire	6,812	26,146	85	100.00%
4	Malvern Hills	6,703	27,673	77	100.00%
5	Calderdale	6,262	27,882	92	100.00%
6	Powys	6,024	22,334	96	100.00%
7	High Peak	5,917	24,309	85	100.00%
8	Burnley	5,906	24,363	89	100.00%
9	Pendle	5,856	27,895	114	100.00%
10	South Tyneside	5,757	19,377	139	94.32%

**MAP 4: PROW PROVISION IN THE VICINITY OF NORWICH LOCAL AUTHORITY****MAP 5: LENGTH OF PUBLIC RIGHTS OF WAY WITHIN 800M OF A POSTCODE IN THE NORTH WEST,  
GROUPED INTO NATIONAL LSOA DECILES.**

Questions remain as to whether this simply represents a failure to designate PRoW (or the loss of PRoW from maps over time), or an absence of leisure walking routes. This is of particular

significance given that a number of the authorities at the bottom of the list are among the UK's most deprived, notably Liverpool, Blackpool, and Kingston upon Hull (Table 6).

**TABLE 6: DESCRIPTIVE STATISTICS ON FOUR INDICATORS OF PROW PROVISION,  
BOTTOM TEN LOCAL AUTHORITIES**

	Local authority	Length of PRoW within 800m buffer	Length of PRoW within 1,600m buffer	Distance to nearest PRoW of 3km continuous length	Proportion of neighbourhoods with a PRoW of 3km continuous length intersecting 400m buffer
299	Plymouth	796	3,141	597	36.65%
300	Coventry	733	3,228	520	47.18%
301	Kingston upon Hull, City of	709	3,813	656	28.31%
302	Corby	680	3,326	589	36.59%
303	Sefton	568	2,666	694	41.80%
304	Blackpool	471	2,497	784	30.85%
305	Southampton	357	1,875	564	35.81%
306	Liverpool	281	1,327	724	26.85%
307	North East Lincolnshire	212	779	562	47.17%
308	Norwich	129	937	1,138	6.02%

## 6. INTERSECTIONS BETWEEN PUBLIC RIGHTS OF WAY PROVISION, DEMOGRAPHICS, AND DISADVANTAGE

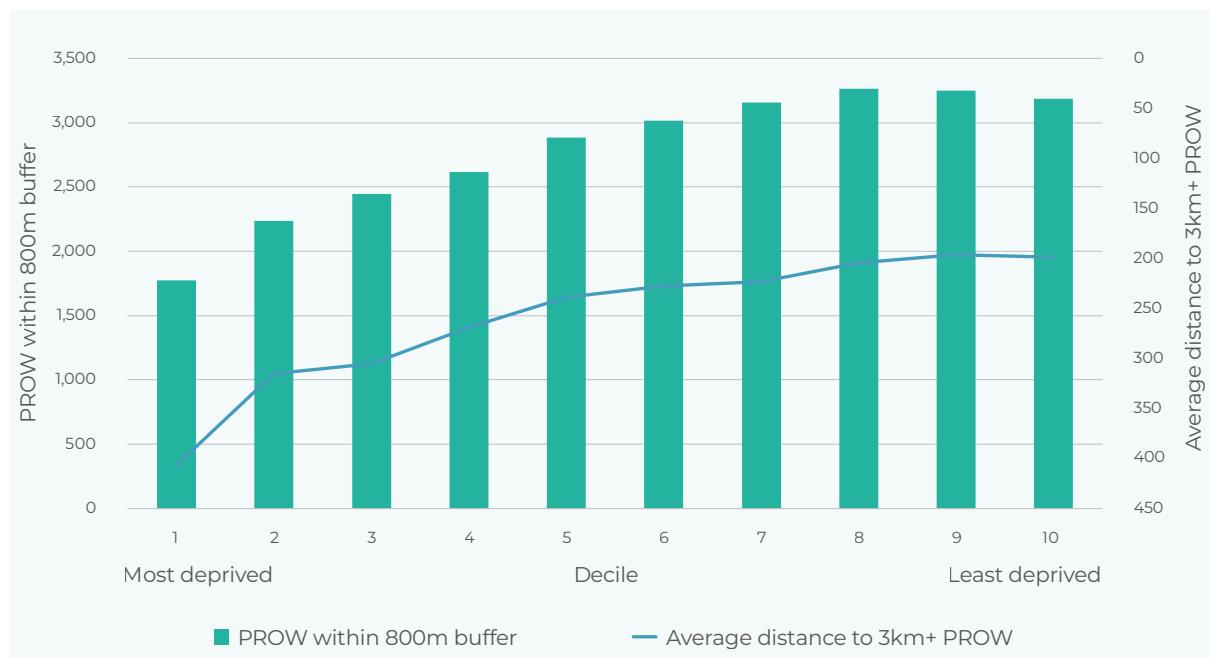
The presence of some of England and Wales's most deprived local authorities among those with the least public rights of way (PRoW) provision flags the question as to whether a trend is present, and how PRoW provision intersects

with wider social, demographic, and economic factors in England and Wales. To this end we further combined our indicator dataset, again using the Lower Layer Super Output Area (LSOA) code as the linking variable, with a variety of public third-party datasets investigating demographic issues.

### 6.1 DEPRIVATION INTERSECTIONS

PRoW provision shows a very clear correlation with deprivation. The most deprived communities in England and Wales have the lowest levels of PRoW provision (Figure 5). While this may relate, in part, to the location of these communities in the centre of highly urbanised conurbations, it is nonetheless true to say that individuals experiencing social and economic deprivation are also deprived of PRoW.

**FIGURE 5: PROW PROVISION (LENGTH WITHIN 800M BUFFER AND DISTANCE TO 3KM+ CONTINUOUS PROW), AGAINST THE INDEX OF MULTIPLE DEPRIVATION RANK, GROUPED INTO DECILES**



Source: Authors' analysis and ONS

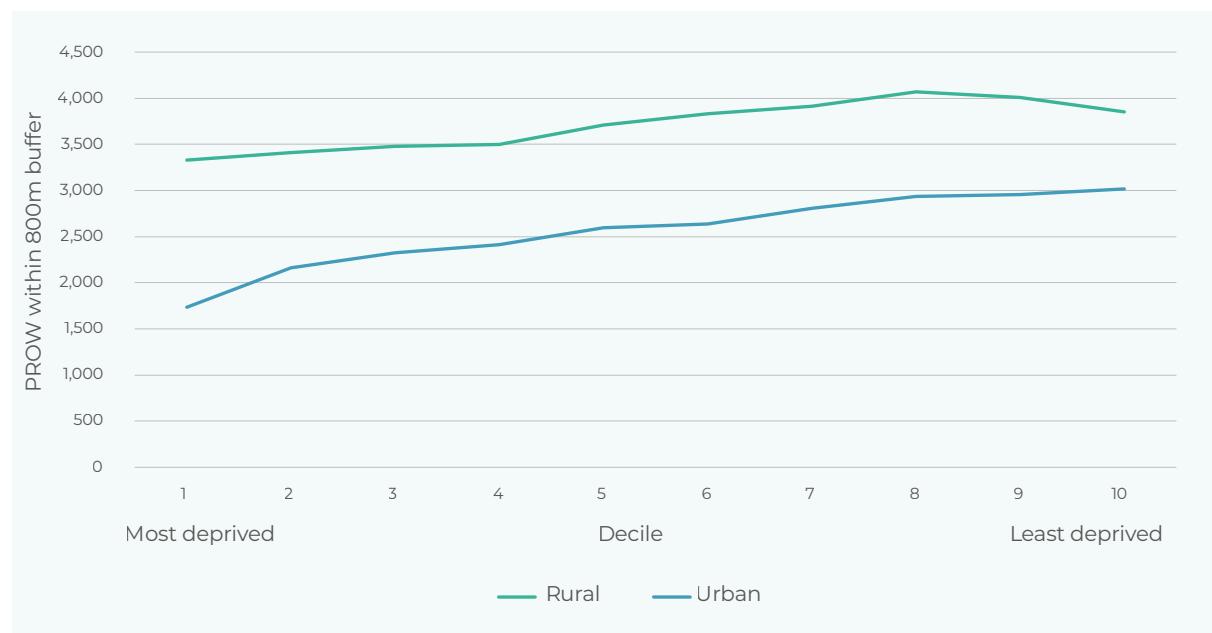
As shown in Figure 6, the deprivation divide can be seen in both the urban and rural populations. It would not be correct, therefore, to attribute the deprivation divide in PRoW provision purely to urban/rural residency. Inequity is lower in rural areas, yet the least deprived decile still, on average, has 15% more PRoW provision within 800m of their home. This differential rises to 74% in the urban cohort.

## 6.2 ETHNICITY INTERSECTIONS

As ethnic minority communities in England and Wales are far more likely to live among deprived communities,<sup>54</sup> it is unsurprising that

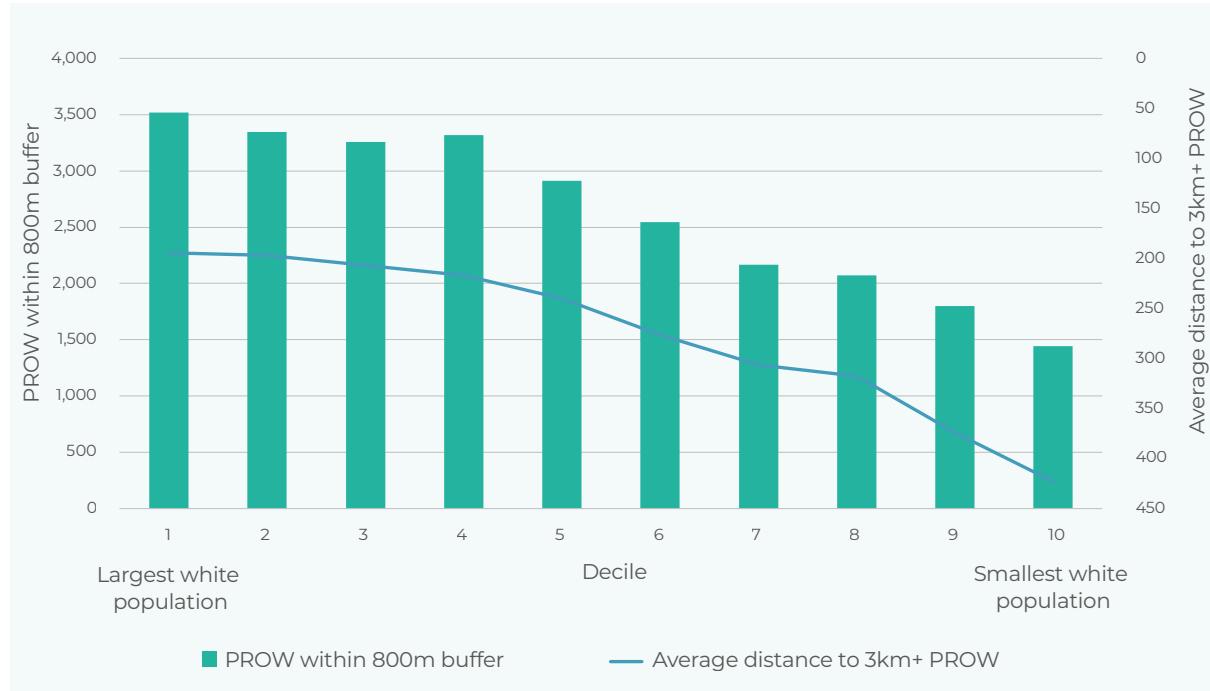
this same correlation plays out when comparing PRoW provision among predominantly white communities versus communities of predominantly ethnic minority backgrounds. Communities with higher proportions of ethnic minority members are supplied with far less local PRoW (Figure 7). Indeed the gap between the bottom and top deciles is even larger when grouping by ethnicity (144%) compared with deprivation (80%). A simple correlation analysis of the raw data suggests that every one percentage point increase in an area's white population is associated with an additional 37m of PRoW within an 800m radius (10 minutes' walk) of a postcode.

**FIGURE 6: AVERAGE PROVISION OF PROW WITHIN AN 800M BUFFER SPLIT BY DEPRIVATION DECILES AND RURAL/URBAN LOCATION**



Source: Authors' analysis and ONS

**FIGURE 7: PROW PROVISION (LENGTH WITHIN 800M BUFFER AND DISTANCE TO 3KM+ CONTINUOUS PROW), AGAINST THE PROPORTION OF THE COMMUNITY OF WHITE ETHNIC BACKGROUND, GROUPED INTO DECILES**



Source: Authors' analysis and ONS

This elevated inequity is likely linked to the fact that deprived ethnic minority communities are also more likely to live in the most urbanised areas which, as shown earlier, is another indicator of low PRoW provision. This intersection places ethnic minority communities in England and Wales at the sharpest end of PRoW inequity and points towards a different experience of everyday life and movement in and around community spaces. This experience is likely at least partially enforced by structural economic factors such as house prices, job availability, and pay levels, alongside historic ones such as the domiciling of the different waves of ethnic migrants in specific parts of the UK based on economic opportunities at the time.

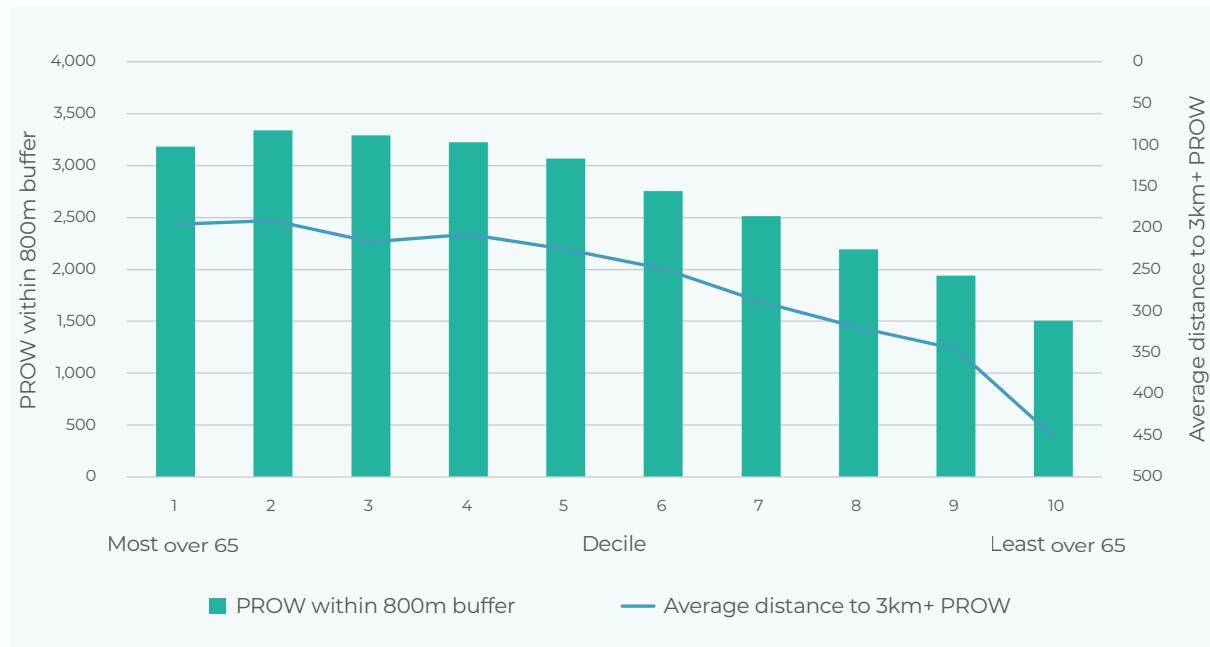
### 6.3 AGE INTERSECTIONS

Also aligned with this trend is the age profile of the population. Younger communities, who are also most likely to live in urban areas, are supplied with less local PRoW (Figure 8).

### 6.4 HEALTH INTERSECTIONS

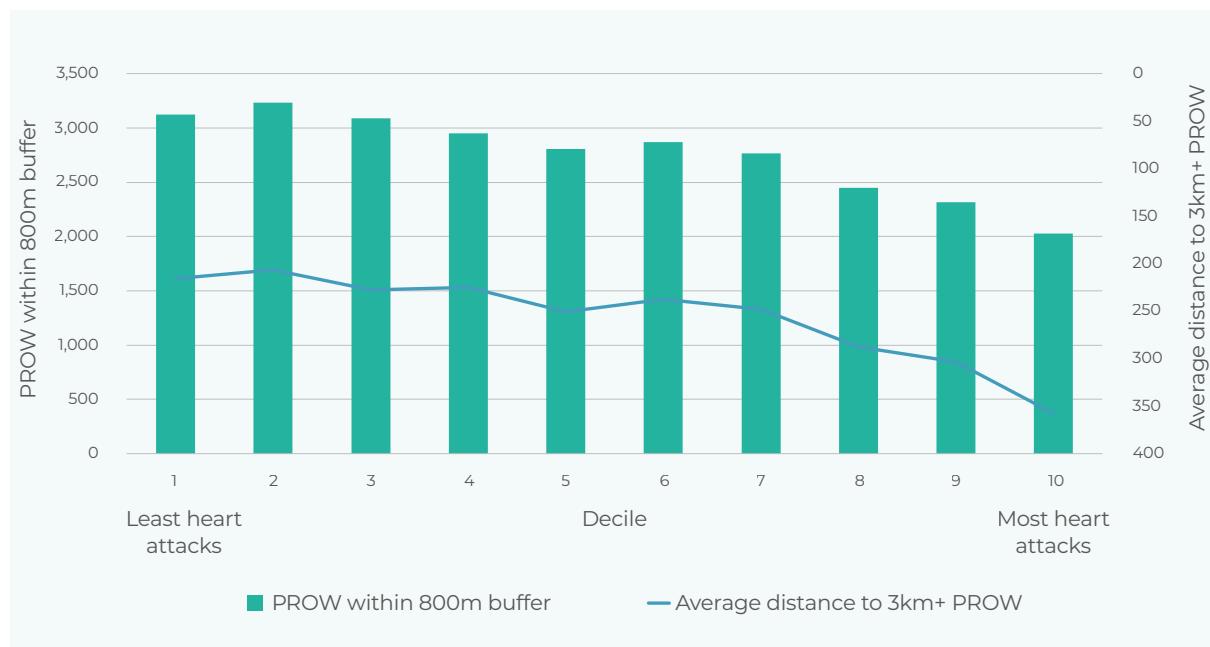
Given the important role of physical activity and visits to nature in maintaining and equalising public health, the link between the provision of PRoW and neighbourhood health outcomes is also of interest. LSOA-level health statistics have limited availability, not least due to privacy issues, so a limited set of options was available. As a proxy for physical health, we analysed data on age-standardised heart attack prevalence at the LSOA level from Public Health England (PHE) with our indicator dataset. As shown in Figure 9, heart attack prevalence is higher in areas with lower PRoW provision (here we are describing a trend rather than proving any causation – this would require significant further analysis). This indicator broadly emulates trends seen connecting deprivation to lower PRoW provision, but still raises questions as to the availability of the infrastructure of physical activity and nature connection to those most in need.

**FIGURE 8: PROW PROVISION (LENGTH WITHIN 800M BUFFER AND DISTANCE TO 3KM+ CONTINUOUS PROW), AGAINST THE PROPORTION OF THE COMMUNITY AGED OVER 65, GROUPED INTO DECILES**



Source: Authors' analysis and ONS

**FIGURE 9: PROW PROVISION (LENGTH WITHIN 800M BUFFER AND DISTANCE TO 3KM+ CONTINUOUS PROW), AGAINST THE PREVALENCE OF HEART ATTACKS (AGE-STANDARDISED) IN THE COMMUNITY, GROUPED INTO DECILES**

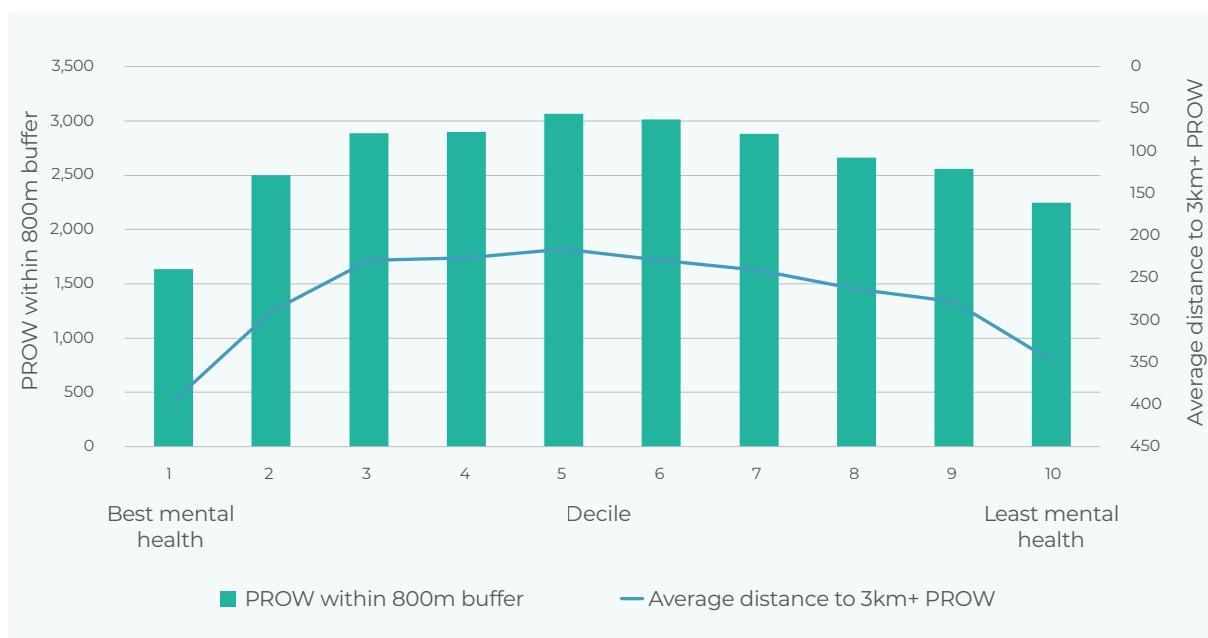


Source: Authors' analysis and PHE - Emergency hospital admissions for Myocardial Infarction

We utilised the National Institute for Health and Care Research (NIHR) small-area mental health index as our indicator of neighbourhood-level mental health. This index aggregates the population-standardised prevalence of mental-health-related hospital attendances, anti-depressant prescription data, and rates of provision of mental-illness-related incapacity benefits. As shown in Figure 10, this analysis produced an interesting trend. Grouping the population using the mental health index suggests those with both the very worst and the very best mental

health are those with the lowest levels of PRoW provision. The highest levels of PRoW provision were found in those neighbourhoods with a middling performance on the mental health index. These trends represent observational correlations; evidencing a causal link between PRoW provision and mental health requires further analysis. At the very least, there is an indication that those individuals with the very lowest levels of mental wellbeing in England and Wales have some of the worst provision of local PRoW.

**FIGURE 10: PROW PROVISION (LENGTH WITHIN 800M BUFFER AND DISTANCE TO 3KM+ CONTINUOUS PROW), AGAINST THE PREVALENCE OF MENTAL HEALTH ISSUES (POPULATION STANDARDISED) IN THE COMMUNITY, GROUPED INTO DECILES**



Source: Authors' analysis and NIHR

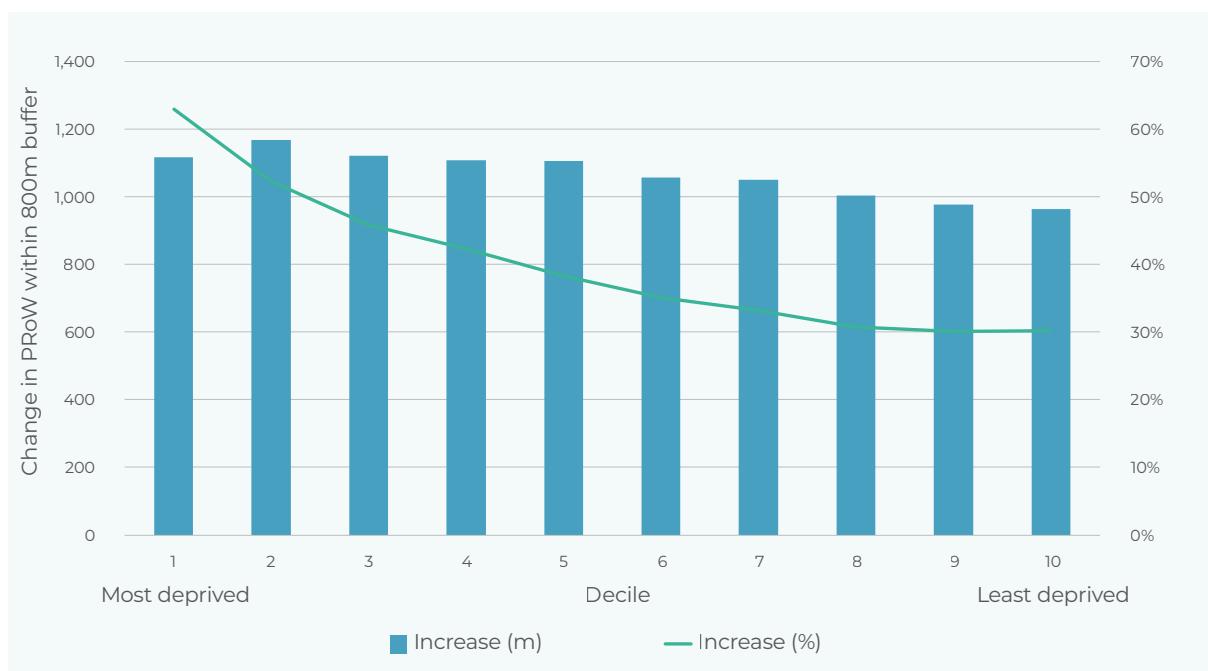
## 7. LOST PUBLIC RIGHTS OF WAY

**D**espite the known benefits of community-level connectivity to nature, many public rights of way (PRoW) have been lost over the past century. The Ramblers have led a project called *Don't Lose Your Way*, to identify and map all of the potential PRoW that have failed to be recorded since 1949. To do this, members of the public examined two historical maps of Great Britain, the Ordnance Survey Six Inch, 1888–1913 map, and the Bartholomew Half Inch, 1897–1907 map. By comparing these maps with the current Ordnance Survey map, some 49,000 miles of potential unrecorded PRoW were identified across England and Wales. Some, but not all, of these lost routes are no longer viable paths, having been built over or otherwise developed over the past 120 years. In some places, lost PRoW may have been replaced with alternative routes that run near to the lost route; in other places, routes have been permanently lost. The map created stands as a testament to how the path network of England and Wales has changed over 120 years.

To highlight the scale and potential value of the path network that has been lost, we ran a further map-based analysis to assess the neighbourhood level of provision of PRoW, inclusive of lost rights of way. This test was run on Indicator 1 of our analysis set, summing the total length of PRoW and lost PRoW within an 800m radius of a postcode.

Our analysis finds that the current England and Wales average level of provision, 2,790m of PRoW, rises by 1,066m (38%) to 3,857m when lost PRoW are included in the analysis. This increase is slightly biased towards urban areas, which see an average rise of 1,101m (44%) compared to a rise of 938m (25%) in rural areas. This is logical, on the basis that PRoW loss is most likely to take place where development is centred. What this means, however, is that the increase seen is also slightly larger, in absolute terms, among more deprived neighbourhoods. When viewed in proportional terms, this means more deprived communities see a much larger (around 30 percentage points), theoretical, proportional increase in PRoW provision when including lost PRoW (Figure 11). In other words, if all historic PRoW had been maintained alongside current levels of provision, poorer communities in England and Wales would have benefited the most.

**FIGURE 11: CHANGE IN NEIGHBOURHOOD PROW PROVISION WITHIN AN 800M RADIUS WHEN ADDING LOST RIGHTS OF WAY TO THE ANALYSIS, BROKEN DOWN BY INDEX OF MULTIPLE DEPRIVATION DECILE AND SHOWN IN METRES (LEFT AXIS) AND AS A PERCENTAGE OF THE CURRENT LEVEL OF PROW PROVISION (RIGHT AXIS)**



Unsurprisingly, there is significant regional variation in the provision of PRoW including lost PRoW. As shown in Table 7, among England's combined authorities there is significant variation. The West Midlands Combined Authority sees the largest increase in absolute terms (1,567m), while the Liverpool City Region sees the largest in proportionate terms (88%).

One argument that could affect the appropriate interpretation of the lost rights of way dataset is that some lost routes were replaced with alternative paths following different, but comparable routes. This argument is at least partially invalidated by a closer look at the local authority level data. As shown in Table 8, some 24 local authorities, including many highly populated authorities, have lost a greater length of PRoW than they currently have within their boundary. It is impossible, therefore, that lost PRoW have been replaced by an equivalent provision of PRoW in another location.

**TABLE 7: CHANGE IN AVERAGE PROW PROVISION WITHIN 800M OF A POSTCODE WHEN INCLUDING LOST RIGHTS OF WAY IN SEVEN COMBINED AUTHORITIES**

Region	Current average (m)	Average including lost rights of way (m)	Change (m)	Increase
West Midlands	2,044	3,611	1,567	76.64%
Tees Valley	1,747	2,849	1,101	63.04%
Greater Manchester	3,011	4,087	1,076	35.74%
West Yorkshire	3,220	4,259	1,038	32.24%
South Yorkshire	3,028	3,955	927	30.62%
Liverpool City Region	904	1,699	795	87.95%
North of Tyne	2,926	3,630	704	24.07%

**TABLE 8: LOCAL AUTHORITIES WITH A GREATER LENGTH OF LOST PROW THAN CURRENT PROW AT THE NEIGHBOURHOOD LEVEL (PROVISION WITHIN AN 800M RADIUS)**

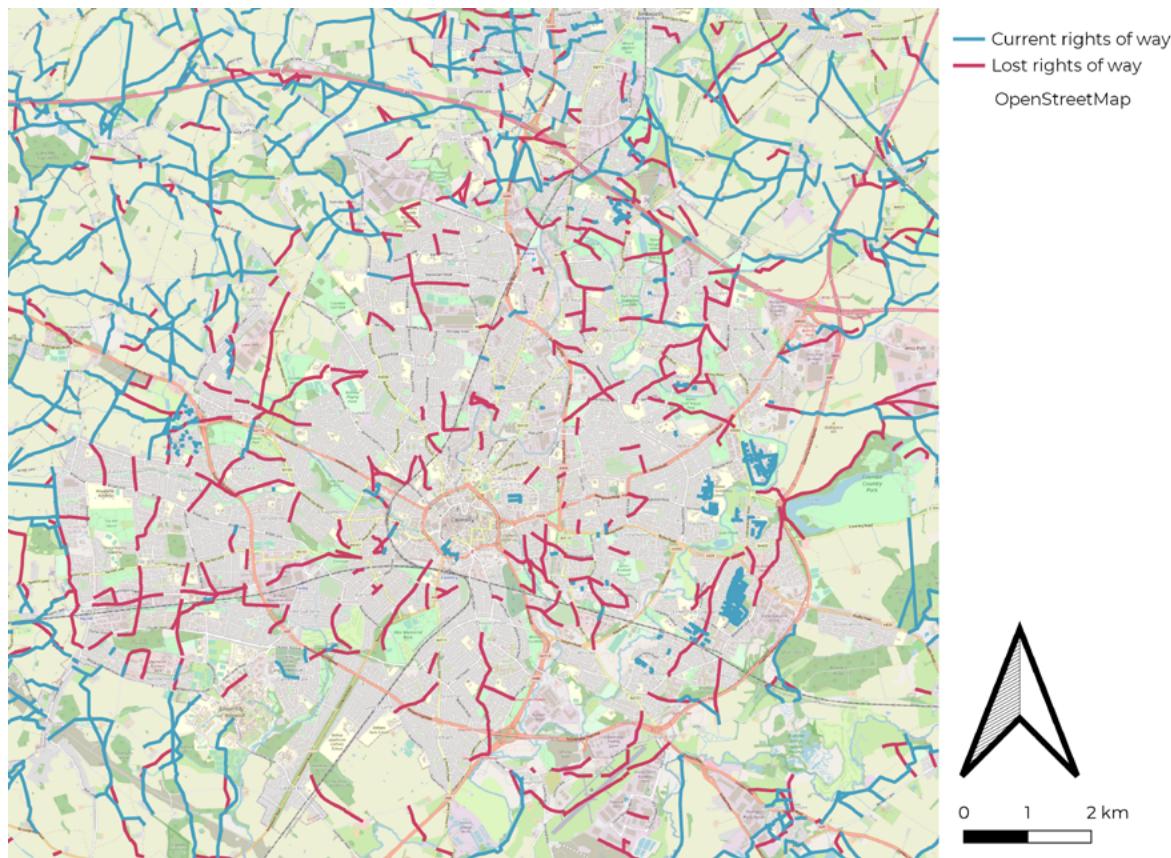
Local authority	Current length of neighbourhood PRoW (m)	Lost length of neighbourhood PRoW (m)	Difference between lost PRoW and current PRoW (m)
Stevenage	1,524	4,173	-2,649
Coventry	733	2,192	-1,459
Eastbourne	1,021	2,263	-1,242
North East Lincolnshire	212	1,174	-962
Stoke-on-Trent	1,332	2,173	-841
Southampton	357	1,166	-809
Blackpool	471	1,269	-798
Plymouth	796	1,593	-798
Sandwell	1,861	2,641	-779
Cardiff	803	1,438	-635
Ipswich	886	1,448	-562
Norwich	129	597	-468
Liverpool	281	745	-463
Manchester	972	1,391	-419
Gosport	974	1,327	-353
Knowsley	808	1,057	-249
Sefton	568	806	-238
Exeter	1,168	1,342	-174
Welwyn Hatfield	2,836	3,005	-169
Reading	1,115	1,249	-134
Hartlepool	877	985	-108
Northampton	958	1,053	-95
Worthing	1,149	1,177	-28
Bournemouth, Christchurch, and Poole	1,608	1,609	-1

An example of this phenomenon is shown in Map 6. A significant length of PRoW has been lost in central Coventry and, very evidently, not replaced with equivalent routes. An example of a lost long PRoW route is a route that previously crossed the area now occupied by Coventry Airport (bottom-right corner of Map 6). Some lost PRoW are still viable routes; this applies particularly to rights of way crossing current green spaces, such as Stoke Heath and Hearsall Common. These examples highlight that while there may be many cases in which PRoW have truly been lost and not replaced, there are other examples where a once-recognised PRoW route may still be in use as a green space or

permissive path. Fully disentangling areas where there is a provisioning issue from areas where there is a designation or identification issue will require further work.

Nonetheless, the data presented underscores the potential of restoration or replacement of some lost rights of way to deliver benefits to under-served and deprived communities. The data also highlights a vulnerability in the current planning system. If lost rights of way are in fact in use but are only considered to be permissive paths and are not legally recorded, these paths are at a greater danger of loss to change of use or development.

#### MAP 6: CURRENT AND LOST PROW IN COVENTRY



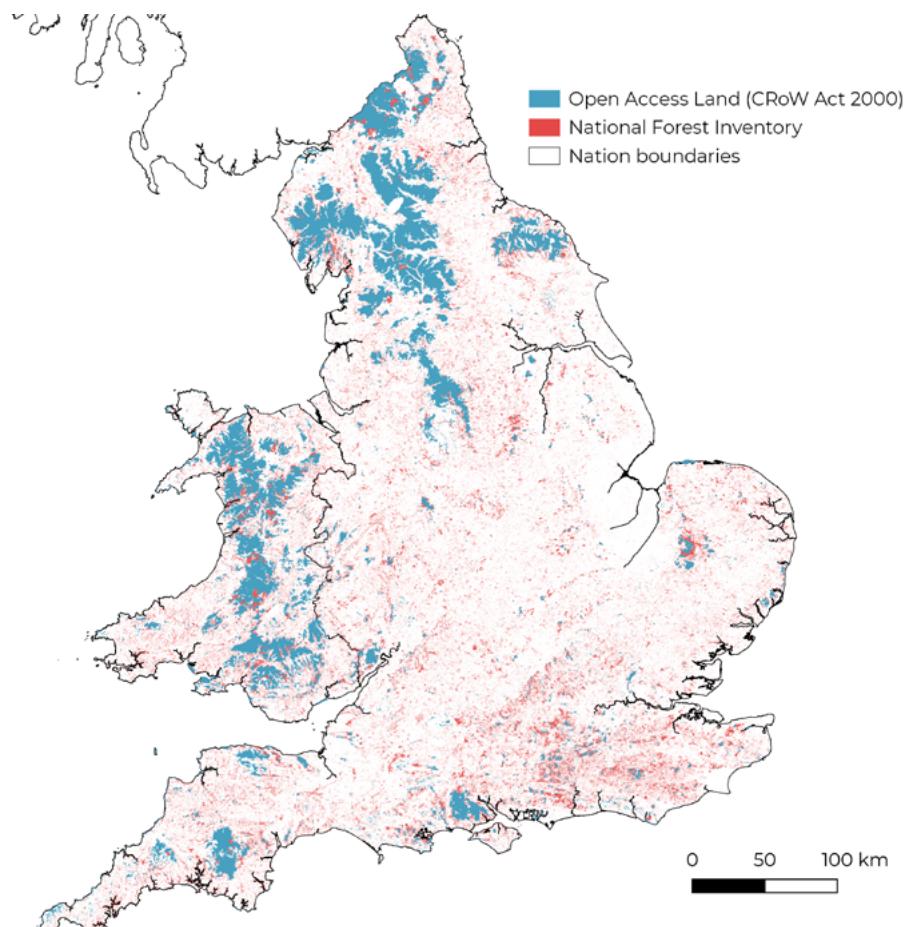
## 8. PROVISION OF OPEN ACCESS LAND

In addition to PRoW, public access to nature and walking experiences are enabled by open access land. The public has a 'right to roam' over mapped areas of open countryside, the majority of which is found in England's national parks and uplands, specifically the Lake District, the Peak District, the Yorkshire Dales, Northumberland National Park, and the Pennines (mainly towards the north and west of England). Wales is comparatively better served with open access land, with large areas in Snowdonia National Park, the Brecon Beacons, the South Wales Valleys, and the Cambrian Mountains (Map 7). Some open access land is not physically accessible to the public, as there is no passable

connection to paths, land with other access rights, or even roads. We sought to supplement our analysis of PRoW provision with an analysis of the accessibility of open access land to communities across England and Wales.

Open access land constitutes a variety of different official land classifications which, when combined, form a complex and overlapping network. To simplify this network we aggregated all areas of open access land less than 10m apart into single units. The result is a network of England and Wales open access land areas containing 14,396 parcels with a total size of 1,522,000ha, equivalent to around 10% of the land surface area of England and Wales. The equivalent figure for England is around 8% and for Wales around 22%. This does not include the coastal margin provided for in the Marine and Coastal Access Act 2009. We set out to assess the accessibility of this open access land to the public by looking at both its connectivity with the PRoW network, and the distance from each postcode to the nearest area of open access land of over 5ha in size (considered here to be a 'useable' size).

**MAP 7: OPEN ACCESS LAND AND WOODLAND (NATIONAL FOREST INVENTORY) IN ENGLAND AND WALES**



## 8.1 CONNECTIVITY OF OPEN ACCESS LAND AREAS

Our first analysis looks at the intersections of open access land with the wider PRoW network. Our analysis finds that some 7,410 parcels of open access land (51%) have no connectivity with the PRoW network. These parcels, however, tend to be very small and isolated. We find that when measured by area, the large majority of the open access land in our dataset has at least one point of connectivity with a PRoW. In land area terms, 97% of the total area of open access land has at least one point of intersection with a PRoW. A subset of 37 parcels has more than 100 PRoW intersections each. This is inclusive of connection points formed by long PRoW, which enter and exit the same parcel multiple times. This subset of 37 areas represents England and Wales's 'prime' parcels of open access land, together they make up 67.1% of the total area of open access land.

## 8.2 NEIGHBOURHOOD CONNECTIVITY WITH OPEN ACCESS LAND

Applying a similar methodology to our analysis of PRoW provision, we analysed the neighbourhood-level provision of open access land. Our core indicator captures the distance from a postcode to an open access land parcel of at least 5ha in size and with at least one connection to a PRoW (ie an access point)

As shown in Table 9, on average, communities are 5.1km from a parcel of open access land at least 5ha in size with a PRoW connection. Further, around 40% of postcodes are within 3.2km (3,200m or 2 miles) of an open access land parcel of at least 5ha in size with a PRoW connection. There is considerable regional variation in these indicators. Open access land is least accessible in the East Midlands and London. Residents of the East Midlands and London will, on average, have to travel three times as far as residents of Wales to reach an open access land parcel of reasonable size.

**TABLE 9: REGIONAL BREAKDOWN OF INDICATORS OF OPEN ACCESS LAND PROVISION INCLUDING ILLUSTRATION OF DISTANCE IF ALL WOODLAND WERE OPEN ACCESS LAND**

	Distance to a 5ha parcel connected to a PRoW (m)	Proportion of postcodes within 3,200m of a 5ha parcel connected to a PRoW	Distance if woodland were open access land (m)	Change (%)
East Midlands	7,541	20.0%	1,470	-80.5%
East of England	4,290	47.1%	1,226	-71.4%
North East	5,520	33.9%	1,313	-76.2%
North West	4,496	38.6%	1,222	-72.8%
South East	3,279	58.8%	1,053	-67.9%
South West	3,317	58.3%	1,035	-68.8%
West Midlands	6,330	29.9%	1,221	-80.7%
Yorkshire and The Humber	5,564	35.2%	1,387	-75.1%
England	5,269	38.1%	1,951	-63.0%
Wales	2,326	72.6%	690	-70.4%
England and Wales	5,107	40.0%	1,882	-63.1%

As shown in Figure 12, the most deprived communities in England and Wales are farthest from open access land. The most deprived group will, on average, have to travel 48% farther to visit open access land than the least deprived group. As might be expected, a similar trend plays out in the ethnicity divide, with residents of the most ethnically diverse neighbourhoods (bottom decile) having to travel 73% farther than residents of the most white-dominated neighbourhoods (top decile). These trends are not fully explained by the rural/urban divide. In aggregate, urban dwellers live only 18% further from open access land than rural dwellers. The location of more deprived communities within cities clearly matters, particularly their proximity to accessible natural landscapes.

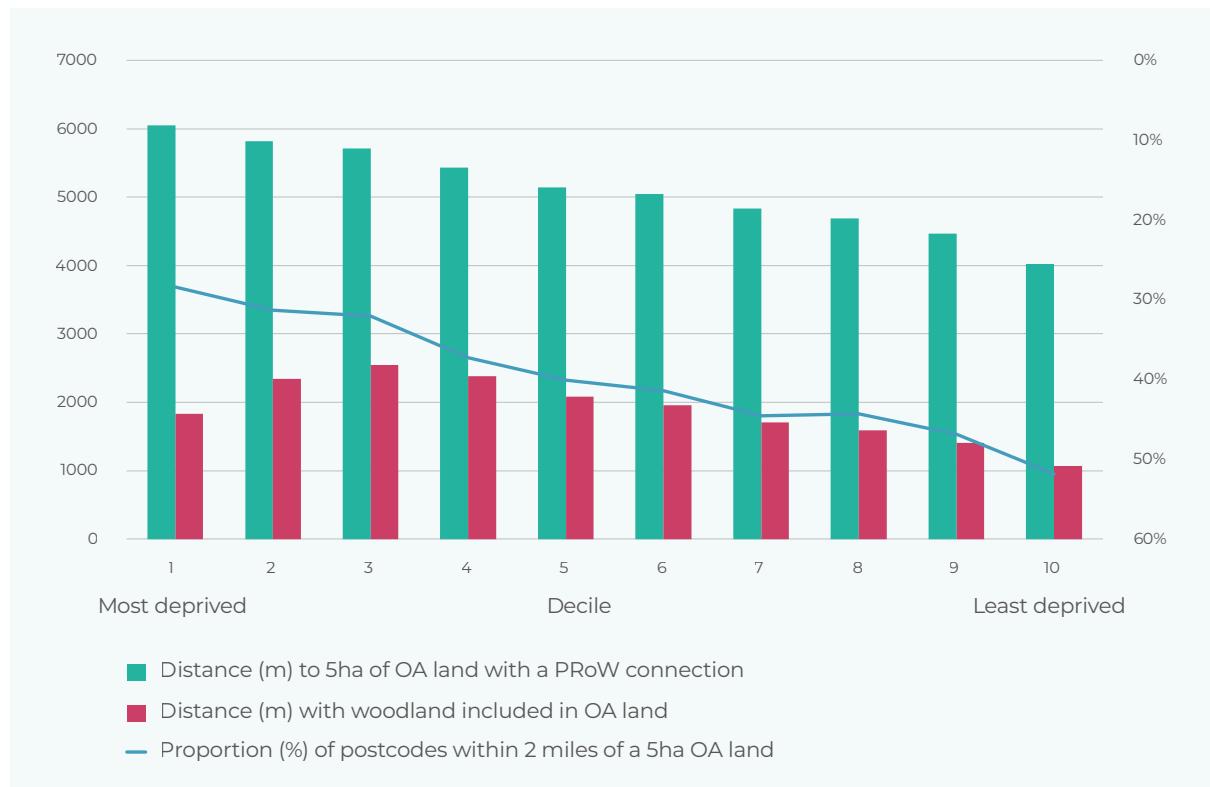
### 8.3 EXPANDING OPEN ACCESS RIGHTS

We conducted a thought experiment in which we tested the impact of extending open access rights to all woodlands registered in Defra's National Forest Inventory on neighbourhood accessibility to open access land (Map 7). The impact of integrating this classification change into our dataset was to double

the overall provision of open access land from 1.5 million ha to 3 million ha. This map contains a considerably greater number of parcels of land, with the total number of parcels (following our integration of all parcels within 10 metres of each other) rising from 14,396 to 231,682. The large majority of these parcels are very small; only 41,872 (18%) exceeded the minimum 5ha in size used as a threshold for inclusion in our analysis.

As might be expected, the impact of this expansion of open access rights would be to significantly reduce the average distance from a postcode to a plot of open access land. The overall average distance reduces by 63%, but with considerable regional variation. London, with its low provision of woodland, sees the smallest reduction in the average distance of 20%. However, the East and West Midlands, the two other areas most deprived of open access land in the UK, see the largest reductions in the average distance, with falls of 80.5% and 80.7%, respectively (Table 9). This implies that a policy of opening up woodland could improve access to nature for all, but particularly for areas currently most deprived of it.

**FIGURE 12: AVERAGE DISTANCE TO OPEN ACCESS LAND PARCELS WITH DIFFERENT CHARACTERISTICS (LEFT) AND THE PROPORTION OF POSTCODES WITHIN 2 MILES OF A 5HA OPEN ACCESS LAND PARCEL WITH A PROW CONNECTION (RIGHT) GROUPED BY INDEX OF MULTIPLE DEPRIVATION DECILE**



Source: Authors' calculations based on ONS and [Gov.UK](#) datasets

Alongside changes in the regional distribution there is also a shift in the equity of the accessibility of open access land. As shown in Figure 12, in our woodland scenario the most deprived areas no longer present as the farthest communities from open access land, and among the middle deprivation deciles there is something of a rebalancing in the equity of access. However, despite the overall improvement in access for all, inequity prevails, as the least deprived groups remain the closest to open access land. Indeed, in proportionate terms, the gap widens, with the most deprived group now 71% farther from open access land than the least deprived group, compared with 50% in the present situation.

## 9. PROVISION IN HELD-BACK AREAS

A key pillar of the current UK government's public policy platform has been its so-called levelling-up agenda. As set out in its February 2022 White Paper,<sup>55</sup> this primarily addresses geographical inequality in the UK, particularly in the domain of productivity but the UK government casts a broad net in its aim to "transform places". References are also made to investment, skills, transport, culture, trust, safety, and resilience. Among this array of intervention areas, there is recognition of the role of paths and access in building the social infrastructure of communities and making them attractive places to live and invest. The White Paper includes a pledge to develop "locally-determined access targets to improve access to the outdoors in towns and cities across the UK" (p. 212). Alongside this, the paper includes a range of pledges on green space, including to "radically expand investment in parks" (p. 212). It is worth noting, however, that the funding levels referred to in the paper, totalling a commitment of £39m, represent a very low amount when measured on an investment-per-area basis, equivalent to around £100,000 per local authority district.

Also relevant are the UK government's pledges on rural access. Including a pledge to "support farmers to protect the environment and enhance

access to nature through the Environmental Land Management Schemes" and to "support the creation of new community forests in the North East, Cumbria and Plymouth to improve access to woodlands where these are needed most." In Wales, the planned Sustainable Farming Scheme will reward farmers for enhancing existing and creating new access, and the creation of a National Forest for Wales includes a commitment to increased public access for leisure.

To understand whether the scale and scope of the UK government's plans will be sufficient, and to support the targeting of schemes aiming to improve access, in this section we look at the scale of the challenge involved in levelling-up paths and open access land provision in the UK government's levelling-up target areas.

There are many ways of characterising communities in the UK, and a variety of different indicators that can be used to highlight those areas experiencing below-average social outcomes. The Index of Multiple Deprivation (IMD), analysed earlier, represents one composite index of social outcomes. The UK government's prioritisation of places for its Levelling Up Fund provides a new composite indicator. This indicator draws from a variety of data sources including productivity, unemployment, skills, vacancy rates, and journey times.<sup>56</sup> Once ranked, local authorities are divided into three groupings, signalling (1) high, (2) moderate, and (3) low levelling-up investment need.

As shown in Table 10, areas classed with the highest levelling-up need have, on average, lower levels of public rights of way (PRoW) provision. The average provision in high-need areas (category 1) is 17% less than in low-need areas (category 3). When considering the median level of provision in each of these area groupings, the gap increases to 30%.

**TABLE 10: PROW PROVISION AND LOST PROW PROVISION WITHIN 800M OF A POSTCODE GROUPED BY LEVELLING-UP PRIORITISATION CATEGORY**

Group	LSOAs	Mean PRoW within 800m of a postcode (m)	Median PRoW within 800m of a postcode (m)	Mean PRoW within 800m of a postcode including lost PRoW (m)	Median PRoW within 800m of a postcode including lost PRoW (m)
1 - High need	10,214	2,510	2,122	3,588	3,316
2 - Moderate need	8,539	2,821	2,506	3,835	3,585
3 - Low need	8,123	2,942	2,750	4,004	3,855

The difference between the mean and median results shown in Table 10 is down to regional variation. Notably a subset of high-need (category 1) local authorities is actually found among those authorities with the highest levels of PRoW provision. This includes rural authorities like Rossendale, Powys, High Peak, Pendle, South Tyne, Blaenau Gwent, and Derbyshire in particular. This sub-grouping of authorities serves to lessen the gap between high- and low-need areas when measuring the average (mean). At the other end of the table, a larger number of high-need authorities can be found with very low PRoW provision. This includes places like North East Lincolnshire, Liverpool, Kingston Upon Hull, Blackpool, Hartlepool, Cardiff, and Knowsley. The large number of authorities in this group brings the median value down notably.

In addition to lacking current provision of PRoW, high-need areas have lost the greatest length of PRoW over the past century, both in absolute terms (albeit marginal) and in relative terms. The median length of lost PRoW in high-need areas of 1,194m, is equivalent in size to around 56% of their current provision. The equivalent figure in low-need areas is 40%.

In summary, while there are some exceptions, a focus on the UK government's levelling-up target areas is also a focus on those areas with some of the lowest paths and access to nature infrastructure provision. Provision levels in these areas have declined over time, as routes have been left off definitive maps and planning practices have failed to protect existing infrastructure and/or build new infrastructure for nature access into new developments. This has left local communities underserved and entrenched in social inequities.

## 10. CONCLUSIONS

To our knowledge, this is the first systematic, neighbourhood-level classification of the provision of infrastructure for access to nature ever undertaken in England and Wales. Much recent analysis has focused on the provision of formally recognised green spaces. While valuable, this misses central components of the critical public infrastructure that provides the link between people and nature. Our analysis is limited, in that it focuses only on those forms of infrastructure with the highest standards of legal protection, ie PRoW and open access land, but in doing so we set the baseline level of infrastructure provision in England and Wales.

Through this analysis, we address the key question: 'Who has a right of way in England and Wales today?'. The answer, in the simplest of terms, is the old, the wealthy, the healthy, and the white. Large inequities prevail between the provision levels of PRoW and open access land between the most and the least deprived neighbourhoods in England and Wales. The lack of PRoW provision, in particular, signals both the lower levels of access to nature afforded to deprived communities and the lower levels of protection placed on the infrastructure currently available to such communities.

The failure to protect the infrastructure of nature access in deprived communities is underscored by our analysis of the 'lost rights of way'. The most deprived communities of England and Wales have lost the greatest length of PRoW, both in absolute and relative terms. While this likely relates to the location of those communities in the most densely populated urban areas, where development has been rapid, this nonetheless highlights a failure to protect the routes of nature access as development unfolded. Our analysis of PRoW provision across housing stock age groups highlights that this issue may be particularly acute in the twenty-first-century planning system. A notable drop can be seen in the levels of PRoW provision afforded to developments taking place between 2000 and 2020 when compared with those delivered in the mid-late twentieth century.

Action is needed to reverse the trend of erosion of this core component of our national critical infrastructure. The steps required from the government can be divided into three core categories:

### 1. Legally record what we can

A vast network of potentially lost rights of way has been identified. While some of these routes are no longer viable due to past development, many are either in use and lack the correct documentation or remain viable for reinstatement.

### 2. Protect what we have

Stronger protections must be put in place to protect the paths and access network we have, preventing loss to development, blockage, or decline into disrepair. This requires both tighter and better-enforced planning legislation, more generous path maintenance budgets, and most crucially, enforcement of land owners' responsibilities.

### 3. Expand infrastructure, and target it where we need it most

Evidence suggests the human-nature connection in England and Wales is already deeply damaged; the levels of inequity in the provision of the critical infrastructure of nature access must urgently be addressed. Capital funding should be passed to devolved administrations, the Welsh government, and combined and local authorities, to enable them to invest in the infrastructure of nature access on a grand scale. Targets should be set to balance the provision to held-back communities, building on the government's levelling-up agenda, and ending an era of piecemeal and derisory investment.

In this report, we have given light touch to a range of critical issues relevant to the human-nature interaction and the role of the paths and access infrastructure. Data on population usage rates remains elusive but new avenues are opening up that will inform future work. In addition, further work is needed to analyse the barriers to nature access that go beyond the simple physical provision, as well as to put the necessary detail on the policy solutions required to restore the human-nature connection in England and Wales.

However, the process of mining the database created through this project has only just begun and the opportunities are expansive. With this project, we have set a baseline establishing, in quantitative terms, the local path network available to communities in England and Wales. The methodological framework will be tweaked and refined over time, by us and by others, to suit the needs of future research, and datasets can be added to shine new light on the intersections between physical infrastructure and social issues. The potential to build quantitative connections causally linking path network provision with health and wellbeing impacts is great, as well as the potential to dive deeper into local and regional paths and open access land stories.

In our next report, we will look at how the path network is being used, how usage varies across places, who uses it, who doesn't, and why not. We will also begin the process of establishing a quantitative link between greater path provision, higher usage, and greater public wellbeing benefits, and test how and why this relationship can vary. Taken in aggregate, we hope this evidence base will help to inform the design of and priority placed on policies and investment aimed at protecting and expanding the infrastructure of nature access in England and Wales.

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**COVER IMAGE BY:**

The Ramblers

**PUBLISHED:**

November 2022

NEF is a charitable think tank. We are wholly independent of political parties and committed to being transparent about how we are funded.

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**THANKS TO:**

This research has been able to be conducted thanks to the support received from players of People's Postcode Lottery. Thank you to the Ramblers staff team including Kate Jury, Tom Platt, Jack Cornish, James MacColl, Harsha Burton, Stephen Russell, Kate Conto, Alison Hallas, Mark Crosby and Rebecca Brough of Ramblers Cymru. Thanks to all local authorities who shared their data with us and to Barry Cornelius of rowmaps.com. Finally a huge thank you extends to the Ramblers volunteers across Great Britain.

