



Mapping access to nature in England

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Wildlife and
Countryside



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Foreword

When writers describe a dystopian future, they paint landscapes of dull grey, or shining steel. The colour green is missing from their palette. But ask a child to imagine a place where people can be happy, and the greens of the trees and the blues of the seas are the first colours they will reach for.

Scientific understanding supports these simple instincts: the sights and sounds of wildlife all help people live happier, healthier lives. Having nature near home helps us to stay fit, whether walking in woods, running in the park or strolling by the river. Having beautiful nature near our homes improves pride in, and connection with, local community and the wider environment.

The pandemic hit home just how important nature within a short walk is, and the detriment not having it can cause. The importance of nature to the public has continued to grow since then, with ever-rising visitor numbers to natural spaces, from our large, protected sites to smaller local parks, woodlands, wetlands and rivers.

In its recent Environmental Improvement Plan (EIP) announcement, the Government gave [a landmark commitment](#) that the public would be able to access green space or water within a 15-minute walk from home. This promise was a welcome feature of this five-year delivery plan to restore nature and the environment, but there was a dearth of detail on how this monumental task would be achieved.

Unfortunately, the problems of disconnection from nature aren't a distant dystopia. Already, millions of lives are shortened and darkened by distance from a healthy environment. A chronic lack of nature in people's lives is a catalyst for ill-health and low productivity; it is a symptom of the worsening state of nature in the UK.

This report explores the scale of the problem and the challenges and opportunities the Government faces in aiming to meet this commitment over the next five years. The challenges are profound, but the reward could be to tip the scales for quality of life, pride of place, health benefits and opportunity creation for our most deprived communities. Turning around a long-term decline in local provision and quality of natural space requires a major shift in course for local authorities. The Government must steer this change through delivering a clear, well-planned mission; mandatory standards and centralised funding.

Transforming its new overarching commitment into on the ground change could help stop the revolving door of declining nature, struggling neighbourhoods and falling public health, and usher in thriving communities that are great for people and wildlife.

Richard Benwell, CEO Wildlife and Countryside Link

Executive summary

Lack of access to thriving natural spaces such as parks, woodland, rivers and wetlands, which are vital for health and wellbeing, is an issue across the country, across income and ethnic groups and in both urban and rural communities.

Our mapping research, utilising official datasets, reveals a number of key findings and trends, which are essential to consider in the context of the Government's commitment to deliver access to nature for all within 15 minutes-walk of home.

1. A problem at scale:

Millions of households across England do not have access to nature near home. Natural England has estimated that a third of English households do not have a natural space within 15 minutes' walk. This statistic is echoed in our findings at local neighbourhood (Lower Super Output Area -LSOA) level.

Our research has delved further into how this issue takes shape across the country. The findings suggest that less than 30% of the population have access to a natural space within 15 minutes' walk from home in more than a third of English local authorities. This means that across a third of the country more than 70% of the population in these areas do not have nature near home.

Drilling down to smaller local communities (LSOAs) the picture looks even more worrying in many areas. We found that in more than 1 in 10 neighbourhoods in England 90% of the population have no access to nature within 15 minutes' walk.

Even in those areas that are most nature-rich and have the best access, only 11 out of more than 300 local authorities have 90% or more of households within 15 minutes' walk of nature.

With around 7.8 million English households without nature near home, and with large areas of the country where the majority of the population don't have nature nearby, the scale of the challenge is clear. This leaves an enormous access to nature gap to bridge, that will need significant policy shifts and associated funding to remedy.

Policy recommendation:

Introduce legal duties to increase access to nature, including:

- Amending the Levelling-Up and Regeneration Bill to require local planning authorities to provide policies on health inequalities, including tackling inequalities in access to nature, in local development plans.*
- Establishing a legal human right to a healthy natural environment through primary legislation, which could take the form of a new Environmental Rights Bill.*

Both legislative changes are vital to put the Government's voluntary commitment on access to nature for all on a legal footing - holding all future Governments to this promise.

2. Nature access issues cross the urban-rural divide:

Our findings reveal that both rural and urban communities are among those with the worst access to nature. While urban nature spaces are often smaller and in poorer condition, rural communities face significant challenges in accessibility, particularly for those reliant on travelling by foot or public transport.

It may seem surprising that our rankings have found more semi-rural and rural dominated areas to be in the worst ten local authorities for access to nature. But this is largely due to lack of publicly accessible spaces that are easily reachable for members of the public by foot.

Some communities may be surrounded by beautiful countryside, but this is often privately owned with no public rights to access it. Equally those spaces which are publicly owned or publicly accessible are not always easy to walk to, with many sites often requiring vehicular access. This particularly disadvantages lower-income households who are less likely to own a vehicle, with two-thirds unlikely to own a car.¹

This means to reach sites which are hard to walk to, lower income households have a greater reliance on often infrequent or unreliable public transport, which potentially may not even directly connect to these natural spaces. The issue of proximity and connectivity for deprived neighbourhoods is key in rural communities.

Policy recommendation:

A range of rural and urban areas must be targeted for improvements to access to nature. Within rural areas that are nature access-poor the most deprived neighbourhoods should be prioritised, given the local community is most likely to be missing out on nature connection.

To ensure greater public access in the countryside public access options must be embedded within the Environmental Land Management Scheme (ELMs) and supported by an overall uplift in ELM funding to support the delivery of public access. This would support farmers and land managers to create more opportunities for people to access, enjoy, and benefit from nature. and its current absence in ELMs is a detriment to the scheme.

3. Double disadvantage on quality and quantity of nature in deprived communities:

Deprived communities are the least likely to have large, nature-rich spaces near their homes, widening the health and opportunity gaps for these groups.

Our research shows that the most deprived communities (as ranked in England's index of multiple deprivation) are more than twice as likely as wealthy communities to live in areas with a low amount of natural space per person. 46% of the most deprived local

1

<https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/datasets/percentageofhouseholdswithcarsbyincomegroupuptenureandhouseholdcompositionuktablea47>

authorities are amongst those with the least amount of natural space per person, compared to 21% of the least deprived local authorities. Of the least deprived English local authorities, 39% are areas with high amounts of natural space per person, compared to around a quarter (27%) of the most deprived communities having high amounts of natural space per person.

There is a huge gap in the amount of nature the most nature-poor communities are able to access, compared to the most nature-rich. The constituencies with the least natural space per person have just under 3m² per person. This is 99% less natural space per person compared to the national average of 311m² per person and less than 0.03% of the more than 10,000m² per person in the most nature-access rich constituencies.

The condition of green and blue spaces in disadvantaged communities with the least nature provision is also frequently found to be poor, especially in urban areas.

All ten local authorities with the least natural space per person are in London. Eight of these fall also within the bottom 10% of areas for condition of the local environment, including outdoor spaces and forests, as ranked by the Legatum Institute's UK Prosperity Index. The remaining two fall within the bottom 25%. Other urban areas with a high proportion of deprived communities, Wolverhampton, Salford, Kingston-Upon-Hull, Coventry, Portsmouth, and Leicester, also fall in the worst quarter of local authorities for both amount of natural space per person and quality of natural space and environment.

Policy recommendation:

The Government's voluntary commitment to ensure access to nature for all within 15 minutes should be backed up by a requirement on all local authorities to set mandatory green infrastructure standards.

Significant new ring-fenced funding for the creation and maintenance of local parks, and other natural spaces, would be needed to fund these new duties and counteract long-term declines.

Introduction

This Wildlife and Countryside Link report maps people's access to natural green and blue spaces in England, utilising existing official green infrastructure and demographic data to offer a new analysis and new insights.

Access to a high-quality natural environment is essential to the health, wellbeing and prosperity of people and communities.² There is robust evidence that nature provides important benefits to physical health and mental wellbeing.^{3,4} A natural and biodiverse environment enhances people's connection to and enjoyment of nature, unlocking these wellbeing benefits and encouraging pro-environmental behaviours, ultimately driving improvements for nature.

The UN has recently declared a [human right](#) to a healthy natural environment. Unfortunately, this right is not currently legally adopted in England, and many people lack nature in their local communities.

There are major disparities in access to nature in England. This has consequences for health, wellbeing, and prosperity, particularly in our most disadvantaged and marginalised neighbourhoods – contributing to the health and opportunity gap for these communities.

Previous studies, and the findings of this research, have found that there are inequalities to access to nature in both urban and rural areas, particularly for people from ethnic minority backgrounds, people on low incomes and disabled people. At the same time, the decline of nature across the country threatens our biodiversity, ability to mitigate and adapt to climate change, and connection to and enjoyment of nature.

Friends of the Earth's 'England's Green Space Gap' report (2020) analysed ONS data which includes private gardens and public parks and playing fields and found that 1 in 5 people in England do not have access to greenspace within 5 minutes of home. It also revealed that people of colour are much more likely to live in England's most greenspace-deprived neighbourhoods.⁵

Fields in Trust's Green Space Index (2022) also used ONS public greenspace data to analyse the total amount of greenspace in an area, the provision of greenspace per person, and population within a 10 minute walk to produce a Green Space Index (GSI) for each local area and region in Great Britain. As well as echoing FOE's conclusions that millions of people in Great Britain do not live within a 10 minute walk of greenspace, the GSI allows comparison across regions: while the South East of England receive a good GSI score of 1.03, the North East and London were ranked with the poorest access to greenspace, with GSI scores of 0.86 and 0.54 respectively.⁶

² [White et al. 2019](#)

³ [Richardson et al. 2021](#)

⁴ [Richardson et al. 2020](#)

⁵ https://policy.friendsoftheearth.uk/sites/default/files/documents/2020-10/Green_space_gap_full_report_1.pdf

⁶ <https://www.fieldsintrust.org/green-space-index>

Recent Ramblers' research found that residents of the most deprived areas across England and Wales have to travel 48% further to enjoy the freedom to roam, and people from the most ethnically diverse neighbourhoods have to travel 73% further.⁷ These trends aren't explained by living in a rural or urban area. Urban residents only live 18% further away from the freedom to roam than those in rural areas.⁸

Wildlife and Countryside Link launched the '[Nature for Everyone' campaign](#) in 2022, highlighting the importance of nature to people and the stark inequalities in access to nature for many people in England. The campaign aims to secure the legal and policy changes necessary to level-up access to nature for all communities.

In support of the Nature for Everyone campaign, this report has been prepared for Wildlife and Countryside Link by Wildland Research Limited (WRL), which is part of WRi, an independent academic institute with specialist knowledge in wilderness, geographical information systems (GIS) and landscape assessment. This report builds on previous green infrastructure mapping, Government standards and data, using a novel analysis to highlight local areas, constituencies and demographics in England that are nature access-poor.

In the 2018 25 Year Environment Plan, the Government considered access to nature benefits, and made a commitment to create more green infrastructure. We warmly support the programme of work from Natural England on Green Infrastructure (GI) that has followed this pledge, and which has fed into the Government's recent welcome commitment in the 2023 Environment Improvement Plan to deliver access to nature for all within a 15 minute walk of home. Natural England has estimated that more than [1 in 3 people](#) in England live further than a 15 minute walk from nature. We build on much of Natural England's work and data in this report.

Our new analysis uses existing Government data from the Natural England Green Infrastructure Standards framework on the quality and quantity of green and blue spaces in communities across England. The analysis draws on publicly accessible natural space, such as parks, river and canal paths, and public walking routes, from Natural England's 'Accessible Natural Greenspace Standards' (ANGSt+) definition and dataset. This differs from the FOE and Fields in Trust research, which is based on ONS data, and our assessment does not include private gardens, which are included in FoE's analysis. This measurement of publicly accessible spaces ensures compatibility with the Government's own data approach in assessing access to nature.

Our analysis is mapped using spatial geographic units including local authority, Parliamentary Constituencies and Lower Super Output Areas (LSOAs). This data is combined with a network analysis of publicly-accessible green and blue spaces within a 15 minute walk using a walkable route and a measurement of the amount of publicly-accessible natural space per person to produce an Area Access Index (AAI – see methodology for full detail). In summary, this report ranks and maps the most nature access-rich and nature access-poor local areas and constituencies in England.

⁷ <https://beta.ramblers.org.uk/support-us/expand-freedom-roam>

⁸ <https://beta.ramblers.org.uk/support-us/expand-freedom-roam>

Local authorities, communities and local people recognise the importance of access to nature and the need to design green and sustainable places. But currently access to nature provisions do not have a sufficient strategic national or local driver and so are not prioritised in local decision-making. Some local authorities have Green Infrastructure Strategies, but these currently sit as planning guidance underneath a Local Plan, without the power to guide other local authority decisions, or the decisions of developers or other public bodies, such as transport authorities. As well, chronically underfunded local authorities are struggling to maintain existing green and blue spaces, let alone improve natural spaces and create additional spaces.

GI mapping is not only an important tool for local authorities to employ to identify areas of poor nature access and take action to remedy this deprivation, it is also a useful tool in national strategic decision-making. For example, in helping to shape £39m of Government's Levelling Up Parks Funding to be spent on improving "the equality of access and quality of natural space."⁹ Eligible counties for the initial £9m funding were selected using the Natural England Green Infrastructure Mapping Tool, based on the ANGSt+ dataset.

Identifying areas and demographics that are nature access-deprived is an essential first step to rectifying this lack of provision of high-quality green and blue spaces for people and wildlife to thrive.

⁹ <https://www.greenflagaward.org/news/uk-government-announces-39m-levelling-up-investment-in-parks-and-green-spaces/>

Results

Using the method described in the technical appendix, a series of rankings and maps have been produced using Natural England's ANGST+ model data and WRI analysis.

The primary metric in this report is the Area Access Index (AAI), a combination of ANGST+ model data and accessible natural space analysis, incorporating a 15 minute walking time via a publicly-accessible route. The AAI also factors in the amount of natural space per person and buffers used in the ANGST+ model of "at least 0.5 hectare within 200m", "at least 2 hectare within 300m", and "at least 10 ha within 1km". This buffering creates a weighting system that reduces skewing of the results by access to very small areas of natural space within 15 minutes' walk. A high AAI value indicates good access to natural space in a community.

The data were analysed at two different geographic units: local authority and constituency, based on analysis at Lower Super Output Area (LSOA), the smallest area unit generally used in official data. The AAI was also calculated for overall population, the population of disabled people, the population of minority ethnic people, and for deprived communities (ranked in the lowest decile in the Index of Multiple Deprivation) within a local authority or constituency.

Null values exist in the AAI disadvantage category, as this is calculated based on the access to natural space of LSOAs within the lowest decile of economic disadvantage. If no LSOAs within the area are categorised as within the lowest decile of deprivation, the value for that constituency or LSOA is Null. Constituencies with no LSOAs in the bottom decile of disadvantage have been removed. Local area data does not include disability, as data about the number of disabled people is only available in local area boundaries. Due to lack of data, the local area of the Isle of Scilly is also not present within the dataset.

There are significantly more constituencies than local authorities in England and these cover a smaller area, so there will be differences in the results due to the different geographical scales being captured and analysed.

Our analysis of the mapping data also utilises the Government's Index of Multiple Deprivation datasets and the Legatum Institute's UK Prosperity Index, which includes an assessment of the quality of the local environment across local authorities. The Legatum Institute's environment ranking is based on data on emissions, air pollution, forest, Land and Soil quality, flooding and water management and waste management.¹⁰

While this report highlights the ten most nature access-rich local areas and constituencies and the ten most nature access-poor local areas and constituencies according to this analysis, please note that the data are imperfect, especially when national datasets are extrapolated to a local level, and this is not a definitive list. However, these rankings are useful to analyse national and regional trends.

¹⁰ <https://li.com/reports/uk-prosperity-index-2021/> (p62 for environment ranking)

A problem at scale

This research has mapped access to nature within 15 minutes' walk from home using local community-level data from Lower Super Output Areas (LSOAs) and local authority level data, to create analysis and rankings for local authority and constituency areas. Within this data we have looked at overall population, the 10% of communities that are most deprived, ethnic minority and disabled people.

The findings show that lack of access to nature is a problem experienced nationwide, and across all types of communities from the most urban to the most rural, and across all demographics.

Our mapping analysis aimed to replicate Natural England's green infrastructure mapping approach as closely as possible using what is publicly known about their methodology¹¹, and utilising the same datasets (see methodology for more detail). Our findings identified that at local community (LSOA) level, 64.7% of the population have access to natural space within 15 minutes' walk of home and 35.3% do not have nature access near home (an average across 31940 communities for which data was usable). This is comparable to Natural England's lead green infrastructure statistic that around 2 in 3 people in England have access, and 1 in 3 people do not have access, to nature within a 15 minute walk from home.

The reported overall percentage of the population with access to natural space varies according to the data level which is analysed. At LSOA level the average proportion of the population without access to nature near home is calculated at 35.3%, at constituency level it is 46.9%, and at local authority level it is 52.1%. The level of accuracy is likely to be highest among the smallest unit area assessment - LSOA.

Table 1: LSOA, constituency and local authority average findings

District level	Average % of population with access to nature within a 15 min walk	Average % of population without access to nature within a 15 min walk	Average amount of natural space per district (m ²)	Average amount of natural space per person (m ²)
LSOAs (31940)	64.7%	35.3%	486,695	308
Constituencies (533)	53.1%	46.9%	29,171,699	311
Local authority (308)	47.9%	52.1%	50,481,987	447

Looking at both local authority level and at a smaller community level we can see that for a significant proportion of the country rates of access to nature are considerably lower than the average.

¹¹ <https://naturallengland.blog.gov.uk/2021/12/07/how-natural-englands-green-infrastructure-framework-can-help-create-better-places-to-live/>

More than half of local authorities assessed (54% 165 of 308) were mapped as having 50% or more of the population who don't have access to nature locally, with a lower rate of 38% mapped at LSOA level (12367 out of 32844). At local authority level our mapping suggests that in almost a third of local authorities (31%, 97 out of 308) more than 70% of the population cannot access nature within 15 minutes' walk of home. Findings were similar at LSOA level, with 26% of communities (8616 out of 32844 LSOAs) having 70% or more of the population who cannot access nature near home.

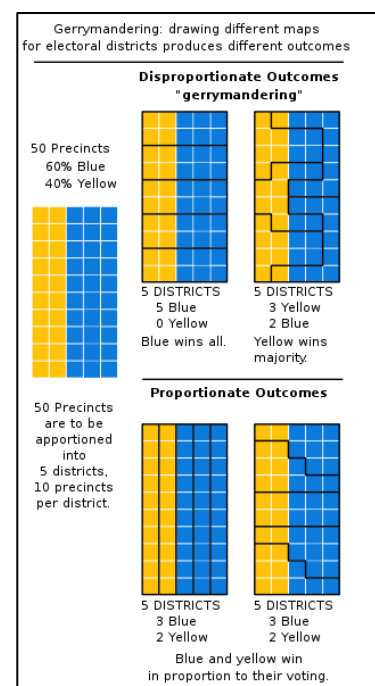
In identifying severe nature deprivation, 13% of neighbourhoods (4354 out of 32844 LSOAs) were found to have more than 90% of households with no access to local nature, with a lower rate of 2% found at local authority level. And 3% of local neighbourhoods (909 LSOAs) were found to have no accessible natural space locally.

At the other end of the scale there is a bigger difference between LSOA and local authority proportions mapped as being particularly nature access-rich. Only 11 out of more than 308 local authorities were found to have 90% or more of households within 15 minutes-walk of nature. In LSOAs a much higher proportion of 40% (13209 out of 32844) have 90% or more of the population with access to nature. The difference is explainable by multiple LSOAs with high proportions of the population without nature access bringing the overall average down within the much larger local authorities (which are on average more than 100 times the size of an LSOA).

Whether looking at LSOA level or at local authority level, there is a clear issue with access to nature. The average of 1 in 3 households missing out on access to nature is worrying enough, but the picture seems even more stark when we consider that around 3 in 10 communities have 70% of the population without local access to nature and in more than 1 in 10 communities 90% of households have no local nature access.

Explaining differences in findings: Averages vary between LSOA, constituency and local authority datasets due to the Modifiable Areal Unit Problem (MAUP). MAUP refers to how results of statistical analysis can vary depending on the size, shape, and boundaries of the geographic units being used. In other words, the conclusions drawn from data analysis can be different depending on how the data is aggregated into different geographic units. A good example is gerrymandering. In the image on the right¹², an area is split by different boundaries to produce different outcomes.

In the case of LSOA, constituency, and local authorities, boundaries were not drawn deliberately to achieve this effect, but do so more or less by chance. In this analysis, the smallest geographical area (LSOAs), are most likely to be accurate, due to a smaller chance of dissimilar areas being grouped together within a single boundary. Smaller areas generally contain less variation than larger areas.



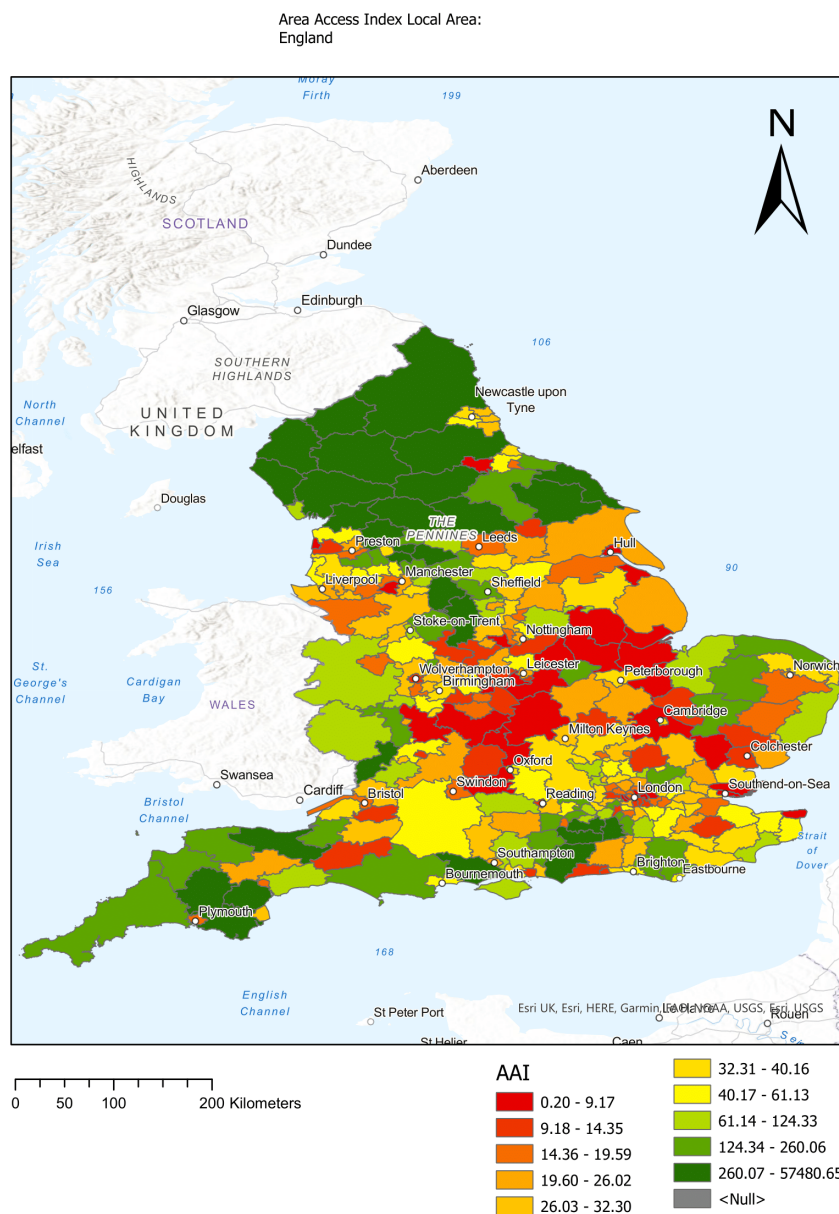
¹² M.boli, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons

Nature access issues crossing the urban-rural divide

The provision of publicly accessible green and blue spaces within a 15 minute walk of home varies widely across England. Recent Ramblers' research found significant limitations on right to roam in the countryside, with much smaller gaps between urban and rural access than might be expected.¹³ Similarly we have found issues with nature access across urban and rural areas alike, with semi-rural and rural areas appearing in the ten worst-ranked areas for access to nature.

Most nature access-poor areas

Map 1: Access to nature (by Area Access Index) across local authorities in England



¹³ <https://beta.ramblers.org.uk/support-us/expand-freedom-roam>

Access to nature (ranked by our Area Access Index - AAI) is particularly poor across the East and West Midlands and East of England, as well as in some local areas in London and the North East.

Table 2: Ten most nature access-poor local authorities in England by Area Access Index

Local authority	Region	AAI	Index of Multiple Deprivation 2019 Average Score Rank (of 317 local authorities)
City of London	London	0.197	212
South Holland	East Midlands	1.464	168
Fenland	East of England	1.492	80
Islington	London	1.874	53
Harborough	East Midlands	2.743	309
Melton	East Midlands	3.945	249
North Kesteven	East Midlands	4.612	271
Kensington and Chelsea	London	4.713	121
Nuneaton and Bedworth	West Midlands	4.807	96
Cherwell	South East	5.338	217

Among the areas in England identified by this analysis as being most deprived of easy local access to nature are the City of London, Islington, and Kensington and Chelsea, South Holland, Harborough, Melton, and North Kesteven in the East Midlands, Fenland in the East of England and Nuneaton and Bedworth in the West Midlands.

These local authorities span urban, peri-urban, semi-rural and rural areas, and are located in London, the East and West Midlands, the South East and the East of England.

The City of London is a very small, highly dense urban area. With very few natural spaces for its residents to access, and a high density of residents per metre of natural space. As such, the City of London scores a very small AAI.

South Holland, while a more rural area, is also identified as among the most nature access-deprived local areas in England, with a low AAI score. The state and availability of nature in South Holland is overall poor, with South Holland being ranked 375th out of 379 local authorities analysed by the Legatum Institute in 2021.¹⁴ While the town of Spalding in South Holland and just outside the town enjoys good access to nature, the rest of the local area has very poor access to nature. Deprivation data echoes this mixed picture: overall South Holland sits midway in deprivation rankings in England at 168th out of 316 local authority areas. According to ONS data, Spalding contains a few very well-off neighbourhoods and the countryside to the east contains several more deprived neighbourhoods.¹⁵

¹⁴ https://li.com/wp-content/uploads/2021/05/South_Holland_East_Midlands.pdf

¹⁵ <https://www.ons.gov.uk/visualisations/dvc1371/#/E07000140>

Fenland is also a primarily rural area, with a similar natural space provision and deprivation pattern to South Holland. Around the main town of March, there are several publicly-accessible natural spaces, however, the rest of the local area is in the main deprived of accessible nature within a short walk. On the natural environment indicator of the Legatum Institute's prosperity analysis, Fenland ranked just below South Holland at 376 out of 379 local authorities analysed.¹⁶ Fenland is the 80th most deprived area of 316 local authority areas in England, and unlike South Holland, it has several neighbourhoods (four in total) in the 10% most deprived nationally.^{17,18}

Islington in London is identified in this analysis, and many others, as one of the most nature-deprived areas in England. In this dense, urban area in London, there are very few publicly accessible natural spaces, and where there are natural spaces, the provision per person is very low. Islington is ranked 53rd in the index of multiple deprivation in England also among the most income-deprived local authorities in England, ranked 35th.¹⁹

Harborough, a local area just outside Leicester, in the East Midlands, is a wealthy rural area, with very few of its population in income deprivation.²⁰ However, there are very few publicly-accessible natural spaces concentrated mainly in just two parts of the local area, meaning that much of the population in Harborough is nature-deprived within their local community.²¹ As well, the overall natural environment ranks poorly in Harborough, and in particular the forest, land and soil indicator, ranking 351 out of 379 local authorities analysed by the Legatum Institute.²²

Melton and North Kesteven in the East Midlands, also among the most nature access-deprived local areas in England according to this analysis, have similar profiles to South Holland and Fenland. They are primarily rural areas, with publicly accessible natural spaces concentrated in the main in two or three locations, leaving many without access to nature within a short walk. While these are not deprived local areas, Melton and North Kesteven are both in the wealthiest 30% of local authorities based on household income,²³ the natural environment in these areas is poorly rated, ranking 349th and 372nd respectively out of 376 local areas by the Legatum Institute.^{24,25}

Kensington and Chelsea, while containing several very affluent London communities also has 23% of its local neighbourhoods (LSOAs) that are in the 20% most deprived communities nationwide. One in four children in the local authority live in poverty and it also has a high ethnic minority population, with people of colour making up 34% of the community, compared to 17% nationwide.²⁶ The Notting Dale ward in Kensington

¹⁶ https://li.com/wp-content/uploads/2021/08/Fenland_East_of_England_v4.pdf

¹⁷ <https://www.ons.gov.uk/visualisations/dvc1371/#/E07000010>

¹⁸ <https://www.data.gov.uk/dataset/173f128d-c36f-4c70-90cc-6c5aef4926ce/indices-of-deprivation>

¹⁹ <https://www.ons.gov.uk/visualisations/dvc1371/#/E09000019>

²⁰ <https://www.ons.gov.uk/visualisations/dvc1371/#/E07000131>

²¹ <https://experience.arcgis.com/experience/5301c55a8189410b9428a90f05596af4>

²² https://li.com/wp-content/uploads/2021/08/Harborough_East_Midlands_v4.pdf

²³ <https://www.ons.gov.uk/visualisations/dvc1371/#/E07000139>

²⁴ https://li.com/wp-content/uploads/2021/08/Melton_East_Midlands_v4.pdf

²⁵ https://li.com/wp-content/uploads/2021/08/North_Kesteven_East_Midlands_v4.pdf

²⁶ <https://thekandcfoundation.com/sites/default/files/2021-11/Poverty%20%2B%20Prosperity%20in%20K%2BC%20Summary.pdf>

and Chelsea is the 9th most deprived ward in London and is where the Grenfell Tower was located.²⁷ Kensington and Chelsea has a distinct lack of natural space, as has also been found by other analyses.²⁸ This is partly due to the boundaries of the local area, but also due to it being the most densely populated borough in England and Wales, with very few existing ‘major’ parks in the area.²⁹

Nuneaton and Bedworth in the West Midlands is located between Birmingham and Leicester. It consists of the two named market towns, the large village of Bulkington and green-belt land. The area has few major public parks and its natural environment is rated poorly in the Legatum Institute assessment, ranked 276th. It is the 96th most deprived local area in England and is the most deprived district in Warwickshire.³⁰

The final local area identified by this analysis as among the most nature access-poor areas in England is Cherwell in the South East of England. Cherwell is not a particularly deprived area, though deprivation has increased between 2015-2019, with the most deprived communities largely in the North of the district.³¹ The state of its natural environment ranks poorly among local areas in the UK, ranked 277th by the Legatum Institute.³²

Table 3: Ten most nature access-poor local authorities in England by percentage of households within a 15 minute walk of natural space

Local authority	Region	Percentage of households within 15 mins of natural space	Index of Multiple Deprivation Rank 2019 (of 317 local authorities)
South Holland	East Midlands	5.001	168
Melton	East Midlands	5.549	249
Fenland	East of England	5.634	80
City of London	London	6.791	212
Harborough	East Midlands	7.097	309
North Kesteven	East Midlands	7.634	271
Stratford-on-Avon	West Midlands	8.549	266
South Kesteven	East Midlands	10.557	231
South Cambridgeshire	East of England	10.577	301
Boston	East Midlands	10.717	102

The rankings of local authority areas by percentage or proportion of the overall population within a 15 minute-walk of publicly-accessible natural space is very similar to the overall AAI rankings. The East Midlands and East of England feature prominently, with many rural areas identified as nature-access poor.

²⁷ <https://www.mylondon.news/news/top-ten-most-deprived-areas-26301023>

²⁸ https://policy.friendsoftheearth.uk/sites/default/files/documents/2020-10/Green_space_gap_full_report_1.pdf

²⁹ <https://www.rbkc.gov.uk/PDF/40%20%20Parks%20Strategy%20Dec%2005.pdf>

³⁰ <https://api.warwickshire.gov.uk/documents/WCCC-644-576>

³¹ https://insight.oxfordshire.gov.uk/cms/system/files/documents/Cherwell_JSNA_2021.pdf

³² <https://li.com/wp-content/uploads/2021/05/UK-Prosperity-Index-2021-web.pdf>

Rural areas may feature more heavily in this indicator (and in the overall AAI) because of the larger area of the local authority and less dense population. This means that the natural spaces that do exist are more likely to be further from the population, especially if they are located in a particular corner or area of the wider local authority area. As well, there may be fewer publicly accessible and walkable routes in rural areas by which to access the natural spaces that might be nearby.

Parliamentary constituency level findings were largely similar to the local authority findings. The vast majority of the most nature access-poor constituencies also fell within the local authorities ranked worst for nature access by the AAI and direct 15 minute access measures.

Table 4: Ten most nature access-poor constituencies in England by Area Access Index

Constituency	Local authority	Region	AAI score
South Holland and The Deepings	South Holland	East Midlands	1.332
Islington South and Finsbury	Islington	London	1.410
Kettering	North Northamptonshire	East Midlands	1.657
Harborough	Harborough	East Midlands	1.831
North East Cambridgeshire	Fenland	East of England	1.986
Islington North	Islington	London	2.339
Rochford and Southend East	Southend-on-Sea	East of England	3.232
Congleton	Cheshire East	North West	3.267
Haltemprice and Howden	East Riding of Yorkshire	Yorks & Humber	3.330
Altrincham and Sale West	Trafford	North West	3.348

Table 5: Ten most nature access-poor constituencies by proportion of households within 15 minutes-walk of natural space

Constituency	Local authority	Region	% of households within 15 mins walk of natural space
South Holland and The Deepings	South Holland	East Midlands	5%
North East Cambridgeshire	Fenland	East of England	6.5%
Sleaford and North Hykeham	North Kesteven	East Midlands	6.5%
Daventry	West Northamptonshire	East Midlands	7.7%
Stratford-on-Avon	Stratford-on-Avon	West Midlands	7.9%
Somerton and Frome	South Somerset	South West	8%
Boston and Skegness	Boston and East Lindsey	East Midlands	8.5%
Kettering	North Northamptonshire	East Midlands	8.5%
Haltemprice and Howden	East Riding of Yorkshire	Yorks and Humber	8.5%
Harborough	Harborough	East Midlands	8.8%

Among the parliamentary constituencies with the poorest access to natural spaces are Altrincham and Sale West, Islington South and Finsbury, North East Cambridgeshire, South Holland and the Deepings, and Boston and Skegness. These constituencies include dense urban areas and rural, more deprived areas, echoing trends seen in the results of the most nature-deprived local areas.

Most nature access-rich areas

The local authorities with the most access to natural space as ranked by the AAI weighting system include areas such as Eden, West Devon, South Lakeland, the New Forest, Northumberland, and High Peak.

Table 6: Ten most nature access-rich local authorities by Area Access Index (AAI)

Local authority	Region	AAI	Index of Multiple Deprivation Average Score Ranking
Eden	North West	13454.18	186
Craven	Yorkshire and Humber	8125.68	245
Richmondshire	Yorkshire and Humber	6444.54	256
Copeland	North West	4547.51	85
West Devon	South West	4542.21	162
South Lakeland	South West	4110.87	250
Allerdale	North West	2761.22	104
Northumberland	North East	2483.26	116
High Peak	East Midlands	2398.79	201
New Forest	South East	1953.83	240

These areas are predominately rural or semi-rural local areas, with important nature sites nearby, such as the Lake District which includes the Eden, Allerdale, Copeland and South Lakeland districts, the Yorkshire Dales (Craven and Richmondshire districts), the New Forest National Park, Northumberland National Park, Dartmoor National Park in West Devon, and the Peak District National Park which includes High Peak. All are very well-resourced with natural space and lots of publicly accessible footpaths and walking routes in green and blue spaces, with many communities within or on the fringes of the National Parks and other nature sites.

Levels of deprivation are mixed. There are some deprived communities within these areas. In both Allerdale and Northumberland, for example, more than 11% of the LSOAs in the area within the most deprived decile. But the majority of these local authorities fall in the less deprived half of the Index of Multiple Deprivation rankings.

The mapping of most nature access-rich constituencies and LSOAs, follow a very similar pattern to the local authority analyses for both AAI and 15 minute walk. Using the AAI mapping, constituencies that are within, or on the edge of, nature sites, in particular National Parks, are found to have the best access to nature.

Table 7: Ten most nature access-rich constituencies by Area Access Index (AAI)

Constituency	Local authority	Region	AAI score
Penrith and The Border	Eden	North West	9702.912
Hexham	Northumberland	North East	8503.370
Copeland	Copeland	North West	7556.118
Skipton and Ripon	Craven	Yorks & Humber	5615.752
Westmorland and Lonsdale	South Lakeland	North West	4625.286
Bishop Auckland	County Durham	North East	2914.928
Richmond (Yorks)	Richmondshire	Yorks & Humber	2885.729
New Forest East	New Forest	South East	2681.203
Berwick-upon-Tweed	Northumberland	North East	2575.983
High Peak	High Peak	East Midlands	2398.781

When looking purely at walkable distance within 15 minutes of home, without using the buffering system in the AAI that factors in the amount of natural space, access to relatively small natural spaces for densely populated areas heavily skew the findings to London. While Londoners may often be closer to a small natural space, these are usually heavily used due to high population levels, and often in poor condition. London communities have by far the smallest amount of natural space per person, which is explored in more detail in the section on deprived communities.

Table 8: Ten local authorities with nearest access to nature by proportion of households within a 15 minute-walk of natural space

Local authority	Region	Percentage of households within 15 mins walk of natural space
Redbridge	London	98.4
Haringey	London	96.6
Wandsworth	London	95.0
Richmond upon Thames	London	94.6
Hastings	South East	94.2
Southwark	London	91.7
Watford	East of England	91.6
Hackney	London	91.3
Merton	London	91.0
Lambeth	London	90.8

Using the direct 15 minute-walk of home measure, without buffering for size of natural space finds London constituencies, and other major urban conurbations – Birmingham and Sheffield - have high proportions of households within closest reach of natural space, even if these spaces are smaller and/or in poorer condition. This is why the AAI ranking with buffers for natural spaces of different sizes give a more accurate assessment of access to natural space. This is explored further in our double disadvantage for deprived communities section from p21.

Map 2: Constituencies by percentage of households within 15 mins walk of natural space

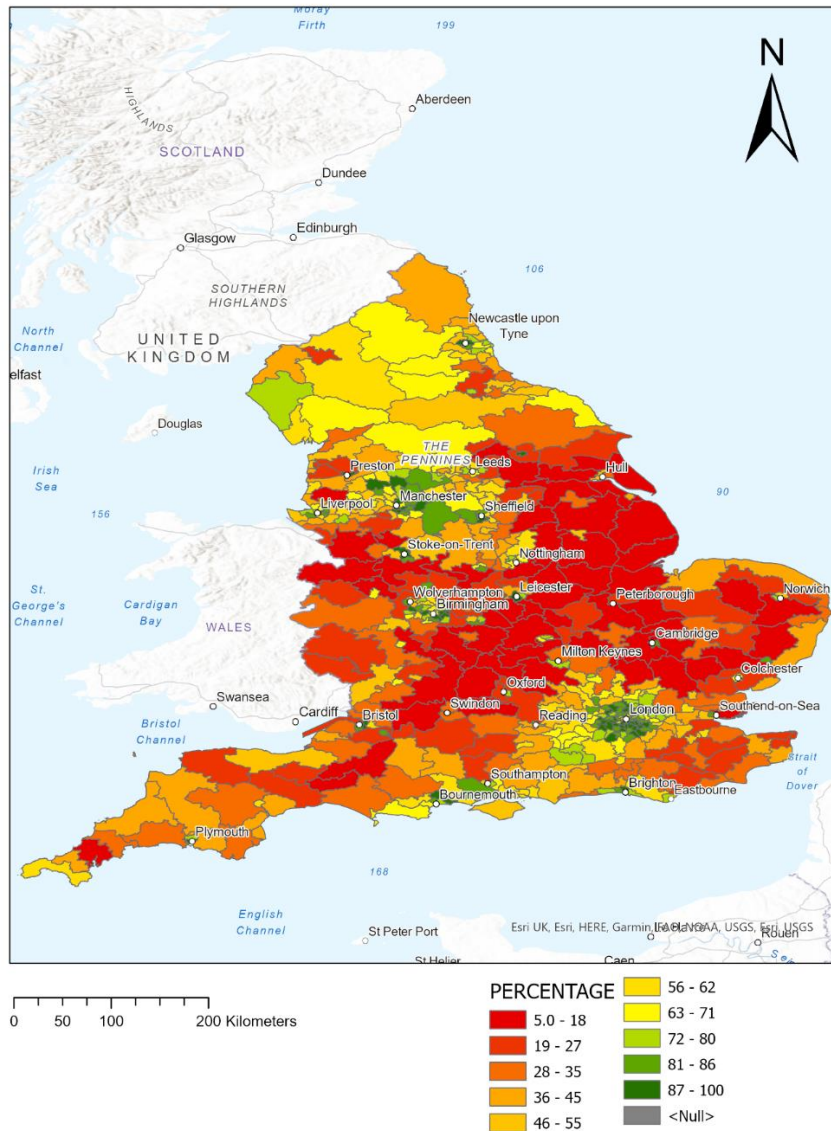


Table 9: Ten constituencies with nearest access to nature, by percentage of households within 15 minutes' walk of natural space

Constituency	Local Authority	Region	% of households within 15 min walk of natural space
Ilford South	Redbridge	London	100.000
Hackney North and Stoke Newington	Hackney	London	99.928
Hornsey and Wood Green	Haringey	London	99.417
Mitcham and Morden	Merton	London	98.742
Sheffield, Heeley	Sheffield	Yorks & Humber	98.236
Birmingham, Hodge Hill	Birmingham	West Midlands	97.411
Ilford North	Redbridge	London	96.862
Putney	Wandsworth	London	96.360
Streatham	Lambeth	London	96.155
Dulwich and West Norwood	Southwark	London	95.921

Double disadvantage for deprived communities

Our mapping analysis shows that deprived communities are facing a double disadvantage on the quality and quantity of natural space that they can access. This is true of a variety of deprived communities across the country, but is particularly the case in deprived neighbourhoods in built-up urban areas.

Quantity of natural space

Our mapping of access to natural space at local authority level, demonstrates that the most deprived communities are more than twice as likely as the least-deprived communities to live in areas with a low amount of natural space per person.

This analysis used a metric based on local authorities ranked by proportion of LSOAs in the lowest decile for deprivation in England's index of multiple deprivation. We then categorised each third of local authorities as most deprived, least deprived and mid-range while local authorities by amount of natural space per person, were categorised in thirds as most nature access-rich, most nature-access poor and mid-range.

Of the local authorities with the highest proportion of LSOAs in the most deprived decile, 46% have low levels of natural space per person, compared to 21% of the least deprived local authorities. Of the English local authorities with no LSOAs in the least deprived decile 39% have high amounts of natural space per person, compared to around a quarter (27%) of the most deprived communities.³³

There are significantly nature access-poor communities in every region of the country, but regional averages reveal that some areas of the country are experiencing proportionally higher nature-access deprivation overall.

Our AAI mapping uses buffers to take account of the size of natural spaces in mapping access to nature. The percentage of households within 15 minutes walk analysis maps walking distance to natural spaces of any size. The London regional averages for both are revealing about public access to small and large natural spaces within the capital, and by extension in other large, dense urban areas.

³³ 47 of 103 (46%) of the bottom third of deprived LAs were in the bottom third for amount of natural area per person, 28 (27%) were in the middle third for area per person and 28 (27%) were in the most nature rich third per person. 24 of 116 least deprived LAs were in the bottom third for amount of natural area per person, 47 were in the middle third for area per person, and 45 were in the most nature rich third per person. We analysed 116 LAs in the higher third rather than 103 because all 116 have the same ranking of 195th in the Index of Multiple Deprivation for least proportion (0%) of LSOAs in the worst decile for deprivation.

Table 10: Regional average AAI scores and average percentage of households with access to nature within 15 minutes, based on Local Authority dataset

English Region	Average AAI Score (most nature access-rich to nature access-poor)	English Region	Average % of households with access to nature within a 15 minute walk (most nature access-rich to nature access-poor)
Yorks and Humber	959.5	London*	80.2%*
North West	769.8	North West	54.7%
North East	297.7	North East	51%
South West	292.6	South East	49%
East Midlands	116.3	Yorks & Humber	44.9%
South East	106.6	West Midlands	43.1%
West Midlands	51.8	East of England	39.4%
East of England	43.9	South West	37.6%
London*	25.4*	East Midlands	32.46%

*When ranked by the AAI London is clearly the worst region for nature access, but when ranked purely by walking distance to natural spaces of any size, London has the highest proportion of households within reach of its natural spaces.

This is because London’s high population density means that a large number of people will be in reach of relatively small natural spaces within the capital. But when size of natural space is buffered so that households are assessed against spaces of differing sizes, London ranks poorly. This highlights that a large proportion of natural space in London is very small in size. This is often also very poor in quality due to high volume of use and lack of space for multiple features.

This finding is reinforced when looking directly at the total amount of accessible natural space in constituencies and the amount of natural space per person. Those with the least amount of natural space are concentrated in the most densely populated urban areas and among some coastal towns such as Blackpool and Worthing, which are also most likely to have a high proportion of deprived communities.³⁴

Area of natural space per person seems to be closely correlated with deprivation – with the more nature access-poor areas frequently having a higher deprivation ranking. This pattern is borne out over the bottom 50 rankings for natural space per person as well, with primarily deprived and urban areas, in London and in towns and cities across the country, being represented.

This reflects other recent research analysing the [greenness of large towns and cities](#) across the UK. This found a statistical link between a lower greenness score and higher levels of deprivation, particularly in northern cities (such as Middlesbrough, Sheffield, Liverpool and Leeds) and a correlation between better levels of greenness in wealthier southern urban centres (such as Exeter, Bournemouth and Cambridge).

³⁴ <https://www.ons.gov.uk/visualisations/dvc1371/#/E07000223>

In the tables below we have detailed the 20 constituencies that are ranked worst for total amount of accessible natural space and amount per person to give a fuller picture as the bottom ten is largely dominated by London.

In the 20 constituencies with the least natural space person, the amount of natural space ranged between just under 3m² per person to just over 11.5m² per person. This is 96-99% less natural space per person compared to the national average of 311m² per person. It is also just 0.03% - 0.115% of the more than 10,000m² per person in the 3 most nature-access rich constituencies in and around the Lake District and Northumberland National Parks.

Table 11: 20 constituencies with least amount of publicly accessible natural space

Parliamentary Constituency	Region	Accessible Area of natural space (m ²)
Islington North	London	353357.267
Islington South	London	374954.514
Kensington	London	681954.455
Chelsea and Fulham	London	692262.887
Vauxhall	London	842436.471
Walthamstow	London	944921.889
Worthing West	South East	959944.739
Lewisham, Deptford	London	964768.518
Wolverhampton South East	West Midlands	993077.993
Poplar and Limehouse	London	1032996.465
Birmingham, Ladywood	West Midlands	1134956.331
Bermondsey and Old Southwark	London	1159757.527
Ealing, Southall	London	1208748.517
Wolverhampton North East	West Midlands	1210345.833
Luton North	East of England	1262640.021
Bradford West	Yorks and Humber	1283469.237
Harrow West	London	1286207.916
Blackpool North and Cleveleys	North West	1357545.224
Portsmouth South	South East	1389568.151
Westminster North	London	1392245.054

Map 3: Twenty constituencies with least amount of accessible natural space

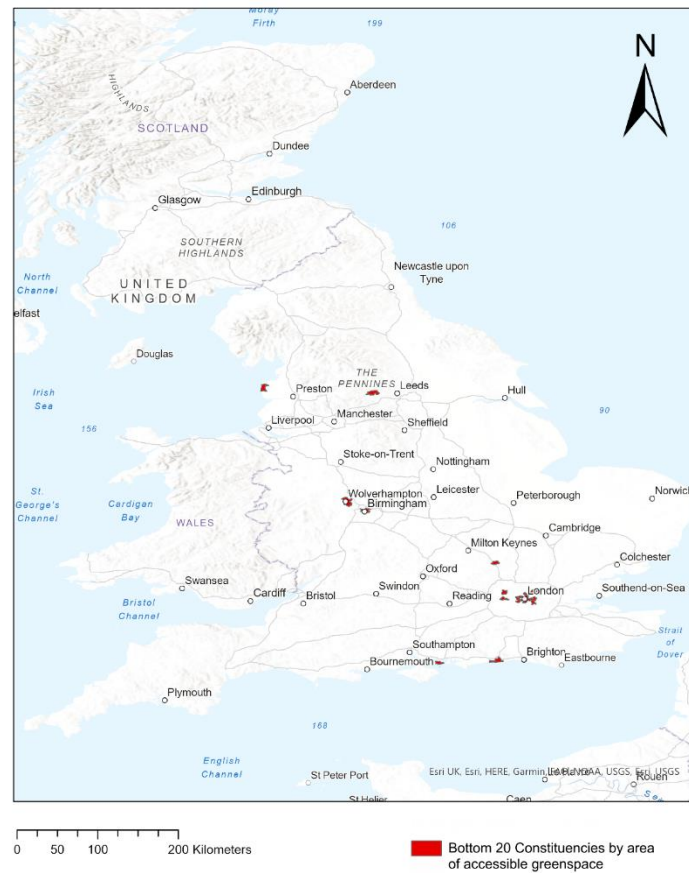


Table 12: 20 Constituencies with least amount of accessible natural space per person

Constituency	Region	Area of natural space per person (m ²)
Islington North	London	2.922
Islington South and Finsbury	London	2.948
Poplar and Limehouse	London	5.873
Kensington	London	5.978
Chelsea and Fulham	London	6.337
Vauxhall	London	6.836
Birmingham, Ladywood	West Midlands	7.500
Lewisham, Deptford	London	7.534
Bermondsey and Old Southwark	London	7.701
Walthamstow	London	7.858
Bethnal Green and Bow	London	9.073
West Ham	London	9.275
Worthing West	South East	9.579
Westminster North	London	9.932
Wolverhampton South East	West Midlands	10.376
Bradford West	North West	10.882
Croydon North	London	10.981
Hackney North and Stoke Newington	London	11.378
Harrow West	London	11.429
Sheffield Central	North West	11.583

A very similar picture is seen when looking at the data at local authority level, with the same urban and coastal towns in the main dominating the mapping rankings for least amount of accessible natural space. Similarly the bottom 10 local authorities for amount of natural space per person are all in London, with Slough, Wolverhampton, Trafford, Blackpool and Southend-on-Sea closely behind within the bottom 20. Of these 10 local authorities all but two are ranked in the most-deprived half of the index of multiple deprivation rankings.

Table 13: Area of accessible natural space per person by local authority

Local authority	Region	Accessible natural space (m ²)	Index of Multiple Deprivation Ranking
City of London	London	32046.339	212
Islington	London	728311.780	53
Kensington and Chelsea	London	955580.761	121
Oadby and Wigston	East Midlands	1320477.219	242
Hammersmith and Fulham	London	2091442.381	112
Slough	South East	2184421.700	103
Stevenage	East of England	2195329.841	140
Blackpool	North West	2416330.673	1
Nuneaton and Bedworth	West Midlands	2434146.790	96
Tower Hamlets	London	2449726.431	50

By contrast, areas with the most overall amount of natural space and most natural space per person tended to be less deprived than average – with the majority being in the least deprived half of the index of multiple deprivation rankings.

The constituencies and local authorities with the highest amounts of accessible natural space overall, and amount per person, are all in areas in and around National Parks and other protected nature sites. Other very rural areas may have equally high amounts of natural space. But as explained in other sections of this report the areas in and around protected nature sites are much more likely to be publicly accessible with close proximity to nature for many communities and a strong network of public footpaths. In some other rural areas natural space is often not immediately accessible to the public due to issues with distance from communities, the need for vehicular access (which disadvantages lower income households), or lack of public rights of way.

Table 14: 10 local authorities with most total accessible natural space

Local authority	Region	Accessible area of natural space (m ²)	Deprivation ranking
Northumberland	North East	1507233100.858	116
Eden	North West	1091827054.498	186
County Durham	North East	712483126.366	62
South Lakeland	North West	616195344.452	250
Craven	Yorkshire & Humber	585114707.702	245
Richmondshire	Yorkshire & Humber	545562705.186	256
Allerdale	North West	502786014.635	104
West Devon	South West	484754459.648	162
New Forest	South East	473457083.308	240
Copeland	North West	435021066.964	85

Table 15: 10 local authorities with most natural space per person

Local authority	Region	Area of natural space per person	Deprivation ranking
Eden	North West	20311.443	186
Craven	Yorkshire & Humber	10204.660	245
Richmondshire	Yorkshire & Humber	10153.306	256
West Devon	South West	8634.896	162
Copeland	North West	6393.511	85
South Lakeland	North West	5873.349	250
Allerdale	North West	5139.311	104
Ryedale	Yorkshire & Humber	4659.303	200
Northumberland	North East	4654.473	116
High Peak	East Midlands	2791.022	201

The local authorities with highest AAI score, highest amounts of natural space overall, and highest amounts per person are far more likely to have lower levels of deprivation. Six of the local authorities with the most natural space per person have no local communities (LSOAs) within the most deprived decile in England. However there are pockets of deprivation even in the most nature access-rich areas such as in deprived LSOAs within Allerdale and Northumberland.

Quality of natural space

Deprived communities, as well as being more likely to have smaller amounts of natural space per person are also particularly likely to be within areas where green and blue spaces are also of poor quality, especially in urban areas.

All of the ten local authorities with the least natural space per person are in London. Eight of these fall also within the bottom 10% of areas for condition of the local environment, including outdoor spaces and forests, as ranked by the Legatum index. The remaining two fall within the bottom 25%.

Table 16: 20 local authorities with least natural space per person compared with Legatum index environment and index of multiple deprivation rankings

Local authority	Region	Natural area pp (m ²)	Legatum Index ranking for natural environment (highest score = worst)	IMD average score deprivation ranking (lowest score = worst)
City of London	London	2.903	378	212
Islington	London	2.935	358	53
Kensington & Chelsea	London	6.095	373	121
Tower Hamlets	London	7.378	368	50
Lambeth	London	10.522	354	81
Newham	London	11.379	372	43
Hammersmith & Fulham	London	11.395	367	112
Hackney	London	11.747	357	22
Southwark	London	12.236	302	72
Ealing	London	14.477	322	105
Slough	South East	14.617	261	103
Wolverhampton	West Mids	14.916	249	24
Lewisham	London	16.211	362	63
Southend-on-Sea	East of England	16.352	190	110
Westminster	London	16.645	379	137
Trafford	North West	17.419	115	191
Blackpool	North West	17.472	93	1
Haringey	London	17.649	346	49
Kingston upon Hull, City of	Yorks & Humber	17.935	356	4
Kingston upon Thames	London	18.324	180	273

Other urban areas ranked in the most deprived 20% of local authorities, including Wolverhampton, Salford, Kingston-Upon-Hull, Coventry, Portsmouth, and Leicester also fall in the worst 20% of local authorities for amount of natural space per person and worst 25% for quality of natural space and environment.

This makes a clear case for targeting the most deprived communities to improve access to nature, quality of the natural environment, and quality of life in tandem as part of Levelling Up plans.

Access for disabled people and ethnic minority households

Ethnic minority households and disabled people, alongside deprived households, have been revealed in multiple studies and analysis to be particularly likely to face lower access to nature in their local area. Disabled people are significantly less likely to access nature with 29% of disabled people reporting not visiting a natural green or

blue space in the previous month when asked - compared to 18% of non-disabled people.³⁵

In many areas our analysis showed similar levels of access to nature for disabled people and ethnic minorities as the general population, reflecting general availability of natural spaces (either poor or good) being fairly consistent across the area.

This is particularly true in the most nature-deprived local areas, as can be seen in fairly similar findings across the general population and specific demographic findings. All of the most nature access-poor areas for disabled people and ethnic minority households, reflect nature-access poor areas ranked in the AAI, or amount of space rankings for the general population.

Table 17: Ten most nature-deprived Local Areas ranked by Area Access Index (AAI) for disabled people

Local authority	Region	AAI	AAI Disability
City of London	London	0.197	0.232
Islington	London	1.874	1.855
South Holland	East Midlands	1.464	2.734
Kensington and Chelsea	London	4.713	4.408
Fenland	East of England	1.492	4.604
Tower Hamlets	London	6.049	5.985
Harborough	East Midlands	2.743	7.223
Hammersmith and Fulham	London	8.720	8.065
Trafford	North West	5.681	8.656
Nuneaton and Bedworth	West Midlands	4.807	9.080

Table 18: Ten most nature access-poor local authorities ranked by Area Access Index (AAI) for ethnic minority communities

Local authority	Region	AAI	AAI Ethnic
City of London	London	0.197	0.313
Islington	London	1.874	1.891
South Holland	East Midlands	1.464	3.654
Kensington and Chelsea	London	4.713	4.327
Fenland	East of England	1.492	4.595
Tower Hamlets	London	6.049	5.924
Harborough	East Midlands	2.743	7.955
Hammersmith and Fulham	London	8.720	8.494
Kingston upon Hull, City of	Yorkshire and The Humber	7.466	8.999
Nuneaton and Bedworth	West Midlands	4.807	9.013

What our mapping also showed was that in other areas ethnic minority and disabled households are disadvantaged compared to the general population for nature access. This can easily be seen in the most nature access-rich communities as measured for the

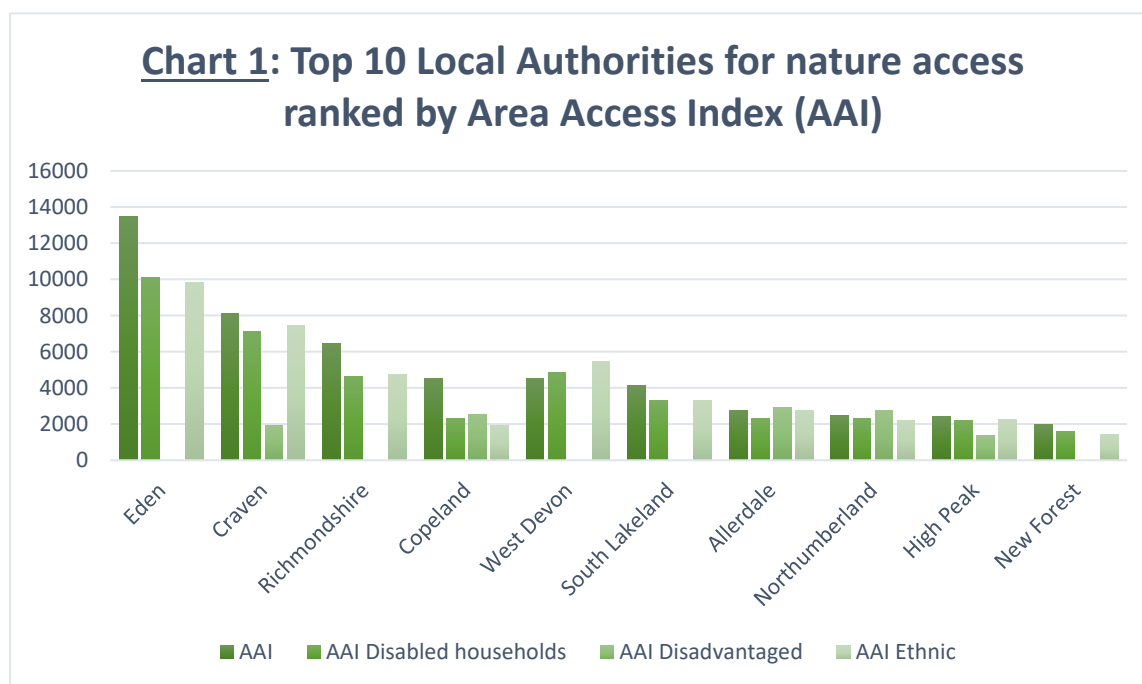
³⁵ [Groundwork, Out of Bounds: Equity in Access to Urban Nature, 2020](#)

general population using our AAI methodology. Within these communities we can see that ethnic minority and disabled households usually have lower access to nature.

Table 19: AAI measurements for deprived, disabled and ethnic minority communities in the 10 most nature access-rich local authorities

Local authority	AAI	AAI Disabled households	AAI Disadvantaged	AAI Ethnic
Eden	13454.176	10109.254	Null*	9804.261
Craven	8125.681	7105.955	1902.641	7428.864
Richmondshire	6444.540	4618.707	Null*	4721.663
Copeland	4547.507	2296.090	2537.591	1947.886
West Devon	4542.211	4877.810	Null*	5482.558
South Lakeland	4110.874	3328.567	Null*	3292.157
Allerdale	2761.220	2300.982	2911.724	2764.195
Northumberland	2483.261	2335.335	2752.273	2172.604
High Peak	2398.798	2214.148	1368.768	2265.356
New Forest	1953.831	1586.193	Null*	1445.080

*Null results indicate there are no LSOAs in the local authority within the most deprived decile



Problems with mapping nature access for disabled people

While general trends can be identified for ethnic minority and disabled households from this analysis, we found that mapping access to nature for minority communities is difficult to do with the level of accuracy we would like to see with the datasets available and within the scope of this project. We believe that more detailed local mapping analysis would highlight even more disadvantage for these groups.

It is particularly difficult to accurately map access to nature for disabled people. Local neighbourhood (LSOA) data does not include disability, as the dataset used, containing numbers of disabled people is only available in local area boundaries, whereas ethnicity and disadvantage are available at LSOA scale. This immediately means a lower level of detail and accuracy in calculating walking distances for disabled people.

The method of calculating AAI and walkable distance relies on Naismith's rule to determine the distance which individuals may walk within the given timeframe. Naismith's rule is based upon the walking pace of the average health adult man, this must be taken into account when discussing the ability of disabled people to access green and blue spaces, as their mobility may be different depending on their disability.

Access for disabled people not only contains inaccuracies due to walking distance being based on an 'averagely healthy' man, it also does not factor in or assess further barriers to travel and the wealth of barriers that disabled people face in directly accessing nature. For example disabled people are less likely to walk for travel (35% compared to 47% for non-disabled people) and are 50% more likely to say a lack of suitable transport stops them from being active (9 per cent compared to 6 per cent of non-disabled people).³⁶

It was not possible in this analysis to assess which natural spaces are genuinely accessible for people with different disabilities. Many spaces are not adequately designed with disabled people in mind and have physical, usability and social-cultural barriers that impede the access and enjoyment of natural spaces by disabled people.

An adequate assessment of a range of factors would be needed to determine if sites were genuinely accessible and usable for disabled people. These would include physical barriers to access (such as obstructions or poor path provision that would make access difficult for wheelchair or mobility scooter users, those with mobility impairments or with customised bikes); lack of disabled parking near entrances; infrequent benches for resting; and lack of braille signage.

It is clear that disabled people face a range of barriers and poor provision for additional needs for specific disabilities. This is certainly contributing to much higher rates of disabled people not visiting natural spaces and warrants close attention from local and national government in considering access issues.

³⁶ [Sport England, Active Lives Adult Survey, November 2020-21](#) and [Activity Alliance, Annual Disability and Activity Survey 2021-22](#)

Case Studies: the mixed picture on nature access

The following case studies highlight the mixed picture on nature access provision, with some examples of challenges in access for disabled people with mobility issues.

Case study 1: Islington North

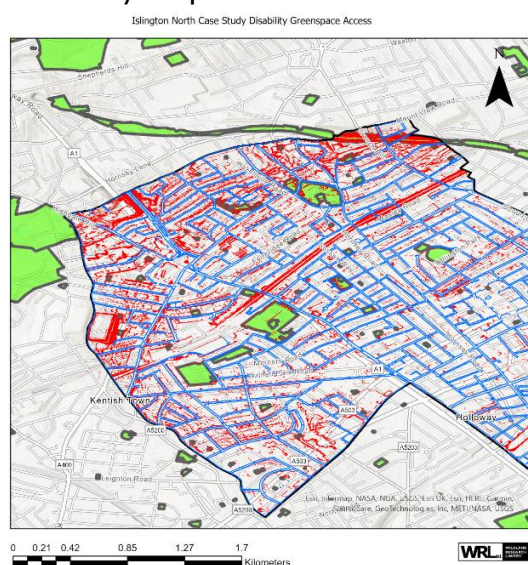
Islington North is within the borough of Islington, close to the centre of London. Islington is the 6th most deprived area in London and one of the lowest ranked areas in many of our datasets - for AAI, amount of natural space and natural space per person. The area is primarily residential, and is split by the primary northbound London rail route. Islington North contains four major areas of natural space, Whittington park, Tufnell park, Highbury fields, and Elthorne park.

The parks include children's parks, with play equipment and soft paved flooring and some public sports capacity (though these require booking due to high demand). The largest park is Highbury Fields, which is 11.75 hectares of mostly open natural space. However, the large population due to dense residential area, and small area of the parks results in a low Area Access Index score and intensive use of the areas. This results in a generally poor condition of much of the natural space within the park.

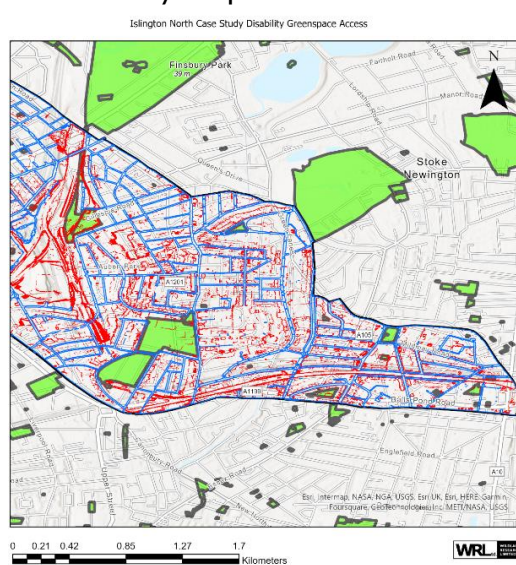
The parks have relatively good accessibility for disabled people with excellent public transport links. And as Islington is essentially entirely flat, the only obstacles to disabled access are man-made artefacts. Transport for London offers a map showing which stations have step free access.

Map 1 covers the east of the constituency, 12 the west. Both show the small areas of natural space surrounded by high density housing, with adequate access routes.

Case Study Map 1



Case Study Map 2



Case study 2: Leeds/Roundhay Park

Leeds is one of the greenest 'core cities' of England with the outer areas including much farmland and woodland. In the green outer suburbs there are nine major parks with a range of features, over 40 neighbourhood parks and over 40 areas that are mainly woodland and/or opportunities to take a circuit round lakes/reservoirs. But in contrast, city centre natural space is relatively meagre: Leeds city centre is [ranked 5th](#) worse for greenness out of 68 large towns and cities.

One of the nine major city parks is Roundhay Park. A medieval deer park, acquired as a [public park](#) by the Corporation of Leeds in 1871. It remains one of the largest city parks in Europe. Lying 3.5 miles north-east of the city centre, it covers over 700 acres (2.8 km²) and attracts approximately six million visitors a year – predominantly local residents. Its intrinsic qualities and recent decades of enhanced management have contributed to its [Green Flag award](#) ..

Accessibility – getting to and around Roundhay park

Roundhay Park was always intended as a park for the people of Leeds. The areas of NE Leeds immediately surrounding Roundhay Park are amongst the least deprived in the city, but not far away are Chapeltown, Harehills, Gipton and Seacroft – neighbourhoods with high proportions of LSOAs amongst the poorest 10% in the country, according to the [Index of Multiple Deprivation](#).

Access by public transport is very good from some parts of more deprived areas of central and NE Leeds, but poor from other neighbourhoods. Citizens who happen to live on or near a bus route can be there very quickly. Other bus routes are off-putting, requiring at least one change.

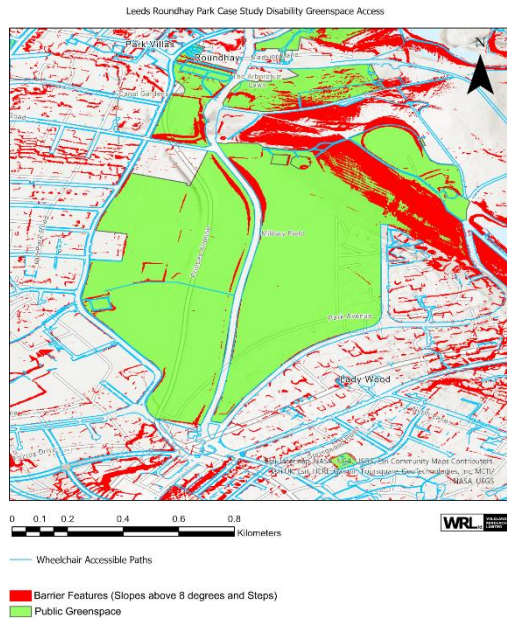
More deprived communities living off good bus routes would face access challenges due to much lower vehicular ownership rates. In 2020 there was one car for every [1.5 adults](#) in Leeds, compared with the average for Britain of 1.7. Car ownership is lower in the more deprived wards. In affluent Roundhay ward only 20% of households have no access to a car/van. In Chapel Allerton/Chapeltown the figure is over 40%. In Gipton & Harehills Ward it is over 55%.³⁷

The city's topography makes it challenging for cyclists, but more than 100 miles of dedicated cycle network is in place and plans are in progress to raise this to above 500 miles.³⁸ The take-up of e-bikes and scooters is improving mobility for some.

³⁷ <https://observatory.leeds.gov.uk/environment/profiles/#/view-report/e2cbbf9fe0a242a09588d45a54cfd814/E05011390/G7>

³⁸

<https://democracy.leeds.gov.uk/documents/s195068/CEAC%20Report%20Climate%20Change%20Transport%20FINAL%20170919.pdf>



With no barriers/gates to limit entry along much of the perimeter, the park is accessible to walkers throughout the day and the year. Properly surfaced and graded routes ensure that visitors with mobility difficulties are catered for, even though many areas remain beyond their reach. During summer months, a 'land train' operates on a limited, set route within the park, enabling visitors to avoid negotiating a significant change in altitude.

Case Study Map 3 shows Roundhay Park. The north of the park presents possible difficulties to disabled parkgoers by its topography. Most of the park is flat, and the routes are well paved, entrances do not feature pedestrian only gates.

Several special interest and health routes have been initiated, ranging from an easy 0.78km walk to a more demanding 2.65km route. These help to highlight features of the park, whilst offering visitors a chance to partake in healthy exercise. Sports enthusiasts, such as footballers, cricketers, crown green bowlers, golfers and tennis players are provided for: 13 football pitches, 5 cricket wickets, 3 bowling greens, 8 tennis courts and an 18-hole golf course. Investment in play facilities for children and teens is a continuing project.

The pandemic led to a massive surge in use of all natural spaces within and close to settlements. A long-term tendency towards more working from home, accelerated by Covid19, has persisted to some degree and there have been various moves towards 'locking in' some of the changes in behaviour, including reduced commuting and better provision of local services. 'The 15-minute neighbourhood' concept, strongly promoted in Paris, has found some support in Leeds as in some other local authority.

Changing park management

There is a slow shift away from traditional park management and maintenance, including a change in focus of towards more space for nature as well as managing the park for people. And it is also managed with people. Across Leeds as a whole, ['Love Leeds Parks'](#) foundation offers support and inspiration. Since the mid-1990s, [Friends of Roundhay Park](#) have worked alongside the City Council's Parks & Countryside staff. Teams of volunteers are involved in development, maintenance, and fund-raising, including securing £8.2m of Heritage Lottery funding for significant upgrading of green features and visitor facilities.

The Upper Lake is managed for wildlife and local birdwatchers clock up sightings of many different species. Engagement is encouraged with understanding tree species, associated fauna, and the local geology. The City Council is supporting tree planting, with involvement of local groups such as [Roundhay Environmental Action Project](#)

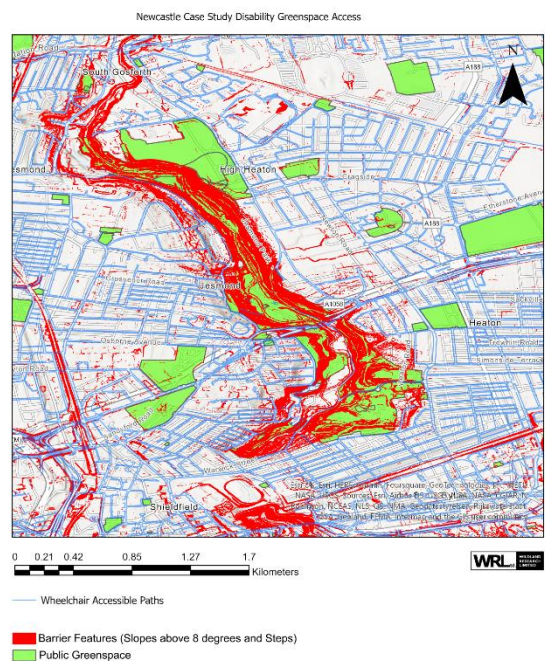
Case study 3: Newcastle, Jesmond Dene

A popular park in the Jesmond area of Newcastle, laid out as part of the private estate of the Armstrong family, in 1860, intended to mimic a rural area. Opened to the public in 1884, the park is currently operated by Urban Green Newcastle, a charitable trust. The attractions include a sequence of waterfalls, historical ruins, and a petting zoo. A volunteer group, Friends of Jesmond Dene, perform physical maintenance and fundraise for the upkeep of the park.



Due to the geography of the park as a narrow valley with steep sides, the descent from street level into the park would be impractical for some disabled people. However, the riverside areas of the park are accessible via the longer route following Ouseburn Road from Heaton Park, further south. In the riverside areas, where there are steps, alternative ramped routes are available.

In Case study map 4, the steep topography of the narrow valley can easily be observed. Areas shown in red represent barrier features, in this case, primarily steep inclines, though the Dene also includes many steps.



Case study 4: Middlesbrough, Albert Park

Albert Park is a public park in Middlesbrough, laid out in 1864 for the purpose of providing a public park for the growing population

The park includes a lake, for boating, and fishing. In 2022, a story trail set in the park leads children around the park to interact with various objects while following the story via a mobile phone app, intended to improve literacy.



In 2005 the park was refurbished, adding a visitor centre, boathouse, roller-skating rink, and play area for older children. The bandstand of the original park was also recreated.

The park is almost entirely flat, and well paved, providing easy access to wheelchair users and people with limited mobility. There are many benches spread across the area of the park, and all main access points are accessible to people with limited mobility. Though a number of informal desire line access points are not accessible to some disabled people.



Case study map 5: shows the dense path network, and the lack of barrier features.

Case study 5: Middlesbrough, Flatts Lane Country Park

Flatts Lane park is a park operated outside of Middlesbrough, by Redcar and Cleveland Borough Council, however it is within walking distance of Middlesbrough. The park is aimed at families, consisting of a wide grass hillside and visitor centre, surrounded by woodland. The visitor centre has toilet facilities, indoor seating, a café with hot and cold food and drinks, a children's play area, and free parking.

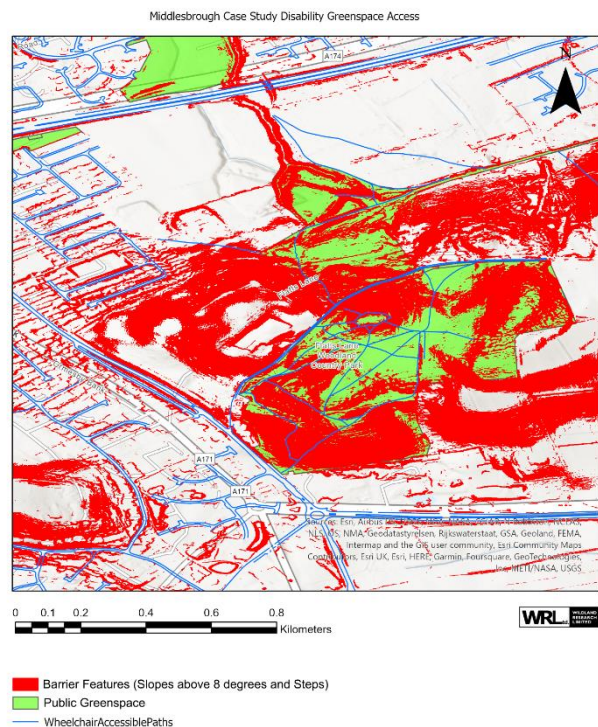


The site could be accessed in part by wheelchair users and people with limited mobility. The lower part of the site, around the visitor centre is mostly flat, and well paved. The visitor centre building is wheelchair accessible.



The upper portion of the site, past the visitor centre quickly becomes steep, and steps are common. The woodland trails are unpaved and uneven. Only a small number of benches are available. Bridleway marked paths are more accessible, but are frequented by horse riders and cyclists.

Case study map 6: shows the intense topography of Flatts Lane Country Park. Only a small area of the park, around the visitor centre, is accessible to disabled people.



Case study 6: the New Forest

The New Forest is a large area of mixed natural space in southern England. The common rights to pasture in the New Forest were confirmed in 1698, and stand to this day. Roughly 90% of the forestry area is crown land, managed by forestry England. Most of the forestry area is inside of the New Forest national park. The New Forest is also a site of special scientific interest.

Invasive species, specifically rhododendron ponticum, are a serious issue within the forest, impacts other plantlife by shading the forest floor and outcompeting, and it is the subject of attempts to control its spread.

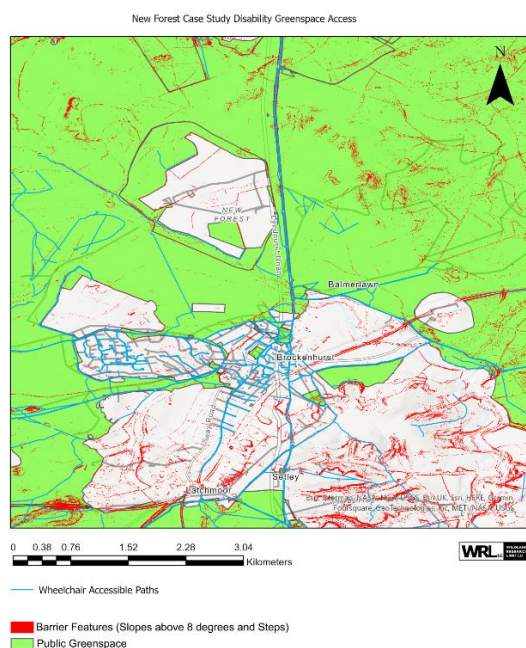
With the quantity of natural space in the New Forest, access to it is abundant. As with the Forest of Dean, the primary way in which disabled people are disadvantaged is in reaching the areas of highest quality. As difficulty to reach a location plays a part in perceived naturalness, it is common that the areas of highest perceived quality are difficult to reach, especially by people with limited mobility.

Due to the different character of the areas, the Forest of Dean and New Forest, being areas of urban space surrounded by natural space, rather than the opposite, the maps are focused on towns rather than individual parks.

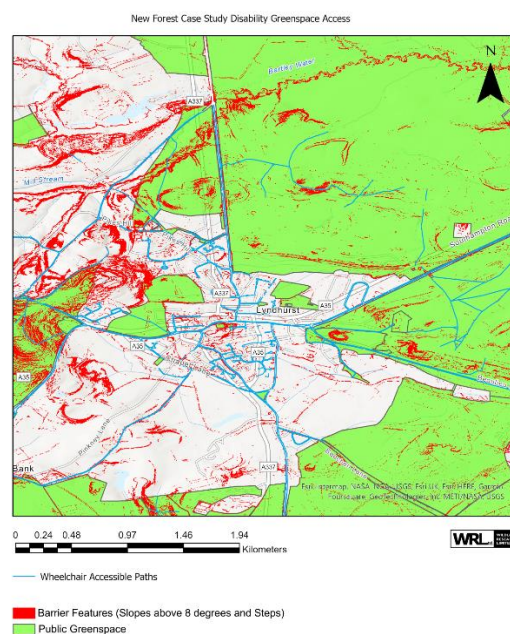
Case study map 7 shows the town of Brockenhurst, surrounded by large areas of natural space with a number of accessible routes into it. The topography is mostly below the 8 degree threshold for difficult terrain.

Case study map 8 shows the town of Lyndhurst, with more severe topography less natural space in close proximity, but with the area mostly accessible.

Case study map 7



Case study map 8



Case study 7: The Forest of Dean

The Forest of Dean is an area of approximately 110 square kilometres of mixed woodland, including ancient woodland, in Gloucestershire, of woodland. Coal-mining was a dominant industry, with high levels of unemployment after closures. The area remains highly represented in the lowest deciles of deprivation. The area has shifted to a tourism-based economy, taking advantage of the forest itself.

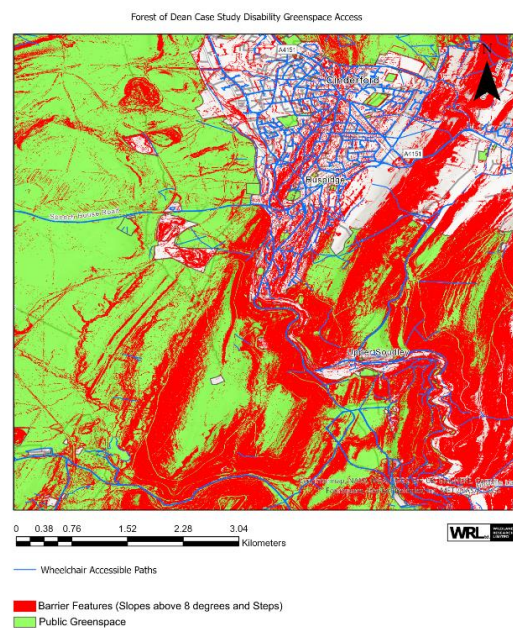
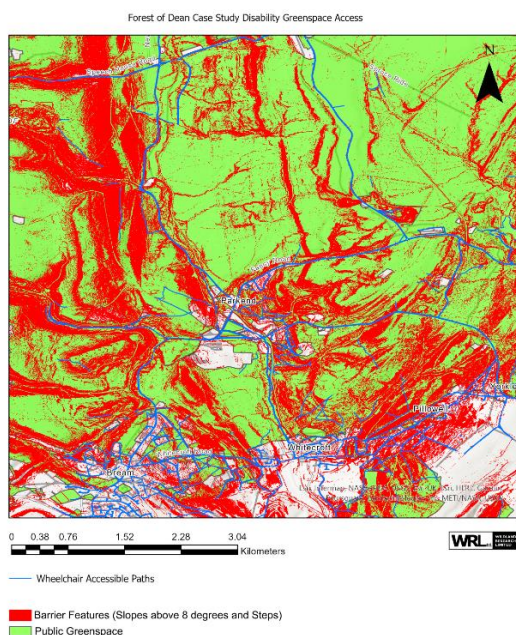
Unlike other case study areas, the Forest of Dean and New Forest areas are not areas of natural space surrounded by urban area, they are the reverse. As the population centres and transport hubs of the Forest of Dean are surrounded by natural space, access to green areas is immediate. However, quality generally increases with travel further away from populated areas. Areas of higher perceived naturalness are more remote, and more difficult to reach, especially for some disabled people.

Rough topography, and commonly unpaved paths present a challenge to people with reduced mobility. A non-profit organisation, Countryside Mobility, offers equipment hire of off-road capable wheelchairs to assist disabled people to access the green areas which would usually be difficult. Additionally, Visit Dean and Wye has a [list of easily accessible walks](#) with short, circular, flat, and well-established paths.

Due to the different character of the areas, the Forest of Dean and New Forest, being areas urban space surrounded by natural space, rather than the opposite, the maps are focused on towns rather than individual parks.

Case study map 9 shows the town of Parkend. The surrounding area is extremely inaccessible to disabled people with limited mobility, due to steep topography.

Case study map 10 shows the town of Cinderford. The Topography to the west of Cinderford and Ruspidge is less severe than to the east and may be more accessible.



Conclusions and recommendations

Our research shows that if the public is to benefit from the Government's new commitment to access natural space or water within a 15-minute walk from their home, a massive shift in prioritisation of local natural spaces, and associated funding for delivery is essential.

The analysis undertaken in this report demonstrates that lack of access to local nature is a problem on a huge scale. The findings suggest 1 in 3 households have no access to nature within a 15 minute walk, 1 in 3 local authorities have more than 70% of the population with no local nature access, and in more than 1 in 10 constituencies 90% of people can't access natural space locally.

While there are issues with local nature access across the country and across all demographics, there is a clear correlation between disadvantaged and minority populations experiencing higher rates of nature-deprivation. This must be addressed and prioritised by Government. Ethnicity, multiple indices of deprivation, and disability findings show negative comparisons to the average population.

The findings reveal deprived households are more than twice as likely to live in areas with a low amount of natural space per person. And even within more nature access rich areas disadvantaged local communities within the constituency or local authority are often more deprived of natural space while being surrounded by communities with high access.

Geographically, areas of traditionally lower economic wealth are far more likely to show poor access to nature. Urban areas with high population density and relatively small quantities of natural space are highly represented in the bottom ten charts.

Lack of nature access is not just an urban issue . Even in rural areas that are surrounded by countryside there are huge issues with lack of access. Lack of publicly accessible spaces, poor public rights of way, and issues in walking and public transport links all limit the public's ability to engage with nature in many rural and semi-rural communities. All of which suggest access to nature needs to be a much clearer focus in the Government's Environmental Land Management schemes.

There is widespread public support for greater focus from Government on local access to nature. 2022 polling showed that 80% of Brits want a 'legal right to local nature', and 85% say accessible natural spaces should be a much higher priority in new developments. While 85% of people living in nature-deprived areas also say more natural spaces would improve their quality of life.³⁹

³⁹ <https://www.wcl.org.uk/nature-for-everyone-launch.asp>

To support local authorities in providing access to nature for all, and to support national government in levelling up nature across the country, we propose important legal and policy changes.

1. **Make equitable access to a high-quality natural environment a key measure of the success of the Levelling Up agenda.**
2. **Introduce legal duties to increase access to nature, including:**
 - Amending the Levelling-Up and Regeneration Bill to require local planning authorities to provide policies on health inequalities, including tackling inequalities in access to nature, in local development plans.
 - Establishing a human right to a healthy natural environment through primary legislation, which could take the form of a new Environmental Rights Bill.
3. **Provide ring-fenced funding for green and blue infrastructure, to enable local authorities to restore, maintain and improve existing natural spaces and create new local natural spaces in collaboration with the local community.**
4. **Target funding and resources towards deprived communities that are most likely to experience lack of access to local nature.**
5. **Encourage local authorities to include measures within local strategies to improve access for ethnic minority and disabled communities – addressing specific socio-cultural and physical needs.**
6. **Embed public access within the Environmental Land Management Schemes (ELMs) supported by an overall uplift in ELM funding to enable farmers and land managers to increase public access.**

These measures would see future developments providing new accessible green and blue spaces for people and would provide the impetus and resources for existing natural spaces to be improved and maintained for nature and people.

Supported by a national mission to level up access to nature, clear and consistent standards on good green and blue infrastructure, and further resources, these measures would support local authorities in providing the Government's promised access to nature for everyone within a 15-minute walk from home.

A linked network of nature-rich spaces across the country for everyone to access and enjoy would spread the benefits of nature access to all communities and people, as well as providing more spaces for wildlife species to recover and thrive. It's a vision the public demand and that Government has promised to support. But recent Government promises must be backed up by policy, legislative change, and funding, that will deliver on the ground, if this vision is to become a reality.

Appendix: methodology and data sources

Wildlife Research Limited (WRL) has utilised in-depth knowledge of landscape mapping and accessibility models and wilderness, geographical information systems (GIS) and landscape assessment to produce the modelling for this report using the following datasets:

- Natural England's ANGST+ green infrastructure datasets⁴⁰
- ONS datasets on census data to formulate mapping based on ethnicity, indices of multiple deprivation and disability⁴¹
- Walking distance and green and blue space assessments were analysed using:
 - CEH Land Cover Map 2020
 - Ordnance Survey datasets and
 - Open Street Map datasets.

The detailed ANGSt+ mapping project included over 40 datasets, the report has added to this number. The ANGSt+ mapping includes caveats which are inherited by this report, primarily the potential sources of error brought about by combining this number of data sources into a single resource. Additionally, the scale of the ANGSt+ mapping project is also inherent to the report, the amount of ground truthing it is possible to accomplish is limited with a country scale dataset.⁴² This emphasises the importance of using local knowledge and ground truthing when employing the data.

Methodology for the Area Access Index

Area Access Index (AAI) is a numerical representation of the quantity and quality of access which individuals of a given population in a given area have to publicly accessible natural spaces. It is based on the combination of ANGST+ and Census data. This method was employed to counteract the outsized effects of multiple small areas casting a larger buffer than a single large area. By combining the ANGST+ data with the ratio of population to natural space, anomalies caused by this effect are minimised.

The area of accessible natural space was calculated using ANGST+. To determine area of natural space per person, ONS 2011 census data on the LSOA level was used. The area of accessible natural space determined by the ANGST+ dataset was divided by population in each LSOA, giving a m² per person value.

⁴⁰ <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::millennium-greens-england-polygons/explore?location=52.717041%2C-1.624733%2C8.13>

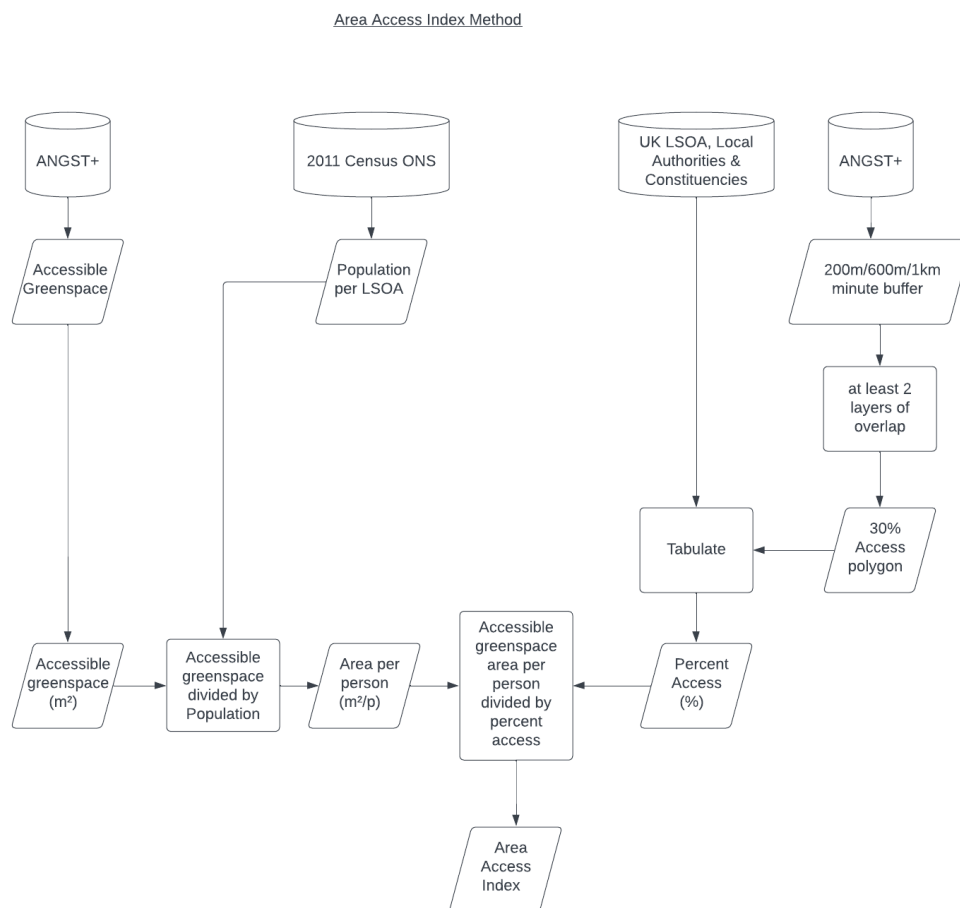
⁴¹ <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>
<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/bulletins/disabilityenglandandwales/census2021>
<https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/ethnicity/bulletins/ethnicgroupenglandandwales/census2021>

⁴² "There are margins for error in the source data that will have transferred into the maps. There are margins for error generated by the generalisations and assumptions that have had to be made to make the mapping practicable. There may be errors that have been generated by processing error or data corruptions. There are margins for error generated by time lag (data drift) – change on the ground takes time to appear on newer versions of the source data." – ANGST+ Project

Three of the ANGST+ buffers were used to replicate the Natural England one in three dataset. The “at least 0.5 hectare within 200m”, “at least 2 hectare within 300m”, and “at least 10 ha within 1km” buffer areas were used. The buffer area was then tabulated, and a value generated at the LSOA level for the percentage of area covered by the buffer, considered to be the percentage access.

To generate AAI for ethnic minority populations, the 2011 Census data was used. At the LSOA level, the population figure was divided by the percentage access value to produce a number of people with access to natural space. The ethnic minority population with access, and total ethnic minority population was then totalled at the constituency and local area levels, and a percentage value derived.

The simplified basic formula for AAI after pathway analysis and buffering has been calculated is: (Area of accessible natural space in square metres / population) / Percent access to natural space.



Calculations on walking times

"Distance, 10 miles; total climb, 6,300 feet; time, six and a half hours (including short halts). This tallies exactly with a simple formula, that may be found useful in estimating what time men in fair condition should allow for easy expeditions, namely, an hour for every three miles on the map, with an additional hour for every 2,000 feet of ascent." Naismith (1892)⁴³

⁴³ Naismith, W. W. (1892) Scottish Mountaineering Club Journal. II: 136

Data sources

Demographic data sourced from Office for National Statistics, ANGST+ data from Natural England. Ethnicity is defined as all categories listed in the 2011 ONS census excluding white groups. Deprivation was calculated as those people living within LSOA's listed in the 10th decile of deprivation in the ONS IMD dataset. Disability is self-reported based on the question "Do you have any physical or mental health conditions or illnesses lasting or expected to last 12 months or more?" reported in the ONS Disability dataset.

Caveats and assumptions

Naismith's Rule and the model used to implement it here assumes a fit and healthy individual, and does not make any allowance for load carried, weather conditions (such as poor visibility and strong head winds) and navigational skills. The model does not take into account barrier features, paths, or topography.

The Angst+ data used within the analysis is a reconstitution of the data used to derive the figure presented in the 2021 natural England greenspace access report, the exact method Natural England used is not published.

Data is reported within LSOA at the smallest area size, ideally, an analysis of this kind would be detailed to the household level, however this data is not published for data protection reasons.

Background on Wildland Research Limited:

Wildland Research Limited (WRL) are the creators of the original wilderness mapping methodology developed for the two Scottish National Parks and have acted as technical advisors to Scottish Natural Heritage (SNH) and the Scottish Government during their original Phase I mapping process. Working together with partners Alterra and PAN Parks, for the European Union Environment Agency (EEA), they have extended the methodology to the whole of the Europe. A modified version of this approach has also been adopted by the US National Park Service and in China.

WRL authored the much-cited report on "The Status and Conservation of Wildland in Europe" commissioned by the Scottish Government. WRL are currently working for IUCN France to develop a map of Haute Naturalité (High Naturalness) based on modifications to the mapping approaches developed in Scotland. WRL members also co-authored a report for the Countryside Agency on countryside in and around towns in 2006.

WRL has worked on a wide number of mapping projects across Europe, with many different organisations.



Mapping and path analysis by Wildland Research
Limited for Wildlife and Countryside Link

Project Manager: Edward Carver

