Impact of COVID-19 on engagement with green and natural spaces

First published 15th September 2021

www.gov.uk/natural-england

NATURAL ENGLAND

Natural England Report PANS003

Impact of COVID-19 on engagement with green and natural spaces

First Published - 15th September 2021

ISBN: 978-1-78354-864-4

Project details

This report should be cited as: The People and Nature Survey for England, *Natural England and Kantar Public (2021) Impact of COVID-19 on engagement with green and natural spaces, Natural England Report PANS003*

Natural England Contacts

Natural England Senior Responsible Officer – Katherine Burgess, Principal Adviser, Katherine.Burgess@naturalengland.org.uk.

Natural England Connecting People with Nature Programme - Cheryl Willis, Principal Adviser, Cheryl.willis@naturalengland.org.uk

Natural England Project Manager – Amy Greenwood, Senior Adviser, Amy.Greenwood@naturalengland.org.uk.

Contractor

Kantar Public, London.

Author

Natural England and Kantar Public

Keywords

Engagement, green and natural spaces, people and nature, segmentation, social media analysis.

Further information

This report can be downloaded from the Natural England Access to Evidence Catalogue: **http://publications.naturalengland.org.uk/** . For information on Natural England publications contact the Natural England Enquiry Service on 0300 060 3900 or e-mail **enquiries@naturalengland.org.uk**.

Natural England is here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

Natural England publications are available as accessible pdfs from www.gov.uk/natural-england.

Should an alternative format of this publication be required, please contact our enquiries line for more information: 0300 060 3900 or email enquiries@naturalengland.org.uk.

ISBN 978-1-78354-864-4

Catalogue code: PANS003

NATURAL ENGLAND

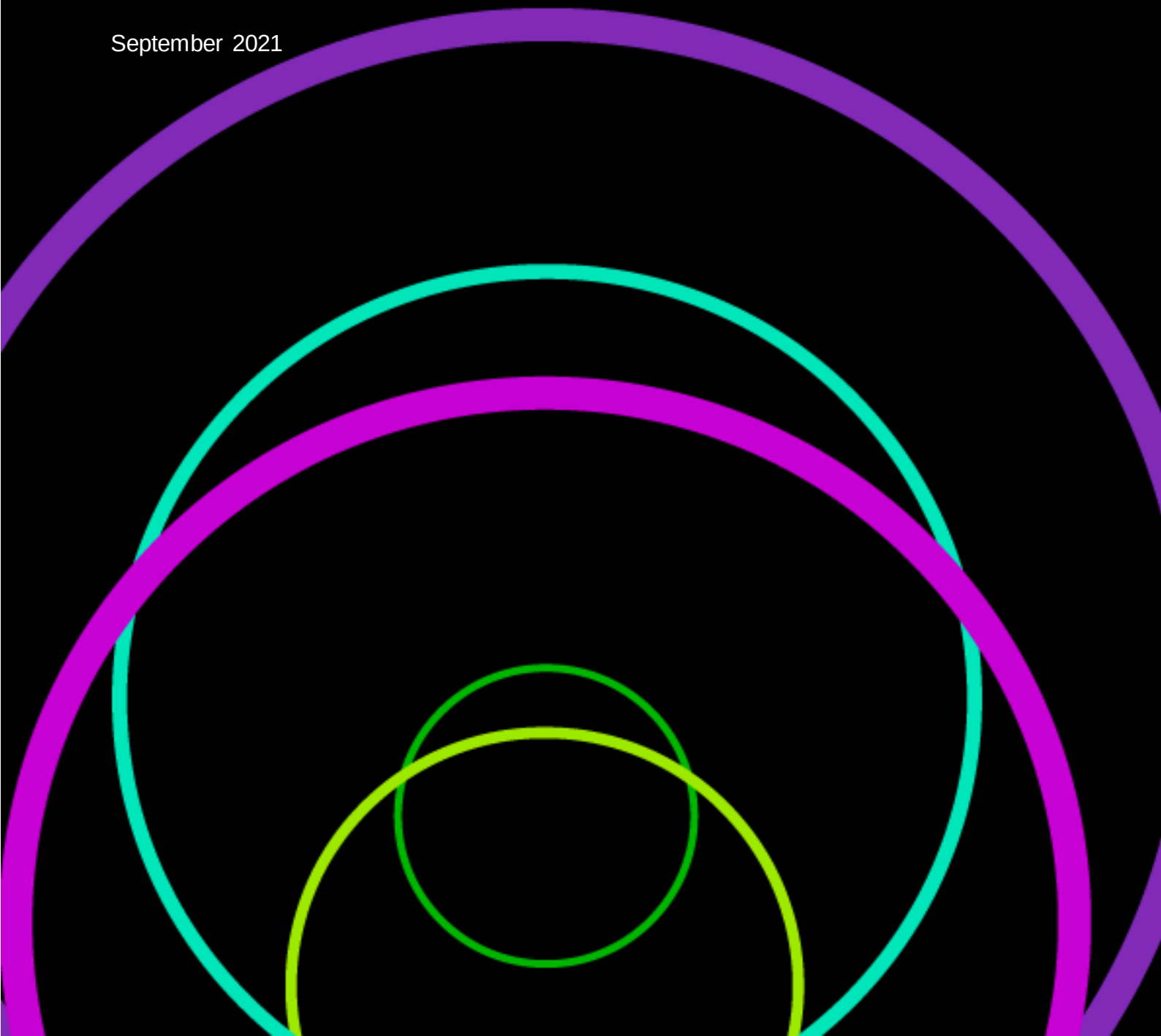
KANTAR PUBLIC

NATURAL ENGLAND

Impact of COVID-19 on engagement with green and natural spaces

People and Nature Survey for England

September 2021



Contents

1. Executive summary

1.1 Background and methodology

The COVID-19 pandemic and subsequent lockdowns provided an unprecedented change in people's lives. The aim of this report is to understand the variety of ways in which different groups engaged with nature during the pandemic.

A mixed method approach was used to understand the different ways people interacted with nature, how they discussed those interactions and benefitted from them, and the barriers to engaging with nature. Methods comprised analysis of the People and Nature Survey for England (PANS), including specific survey and segmentation analysis, and social media analytics. Using multiple sources of data concerned with people's engagement with the natural environment enriches the data and the overall picture provided.

Social media analysis allowed wider, longer data capture than the survey and greater freedom in connections between locations and activities than the survey. Several trends that were not identifiable in the survey were picked up on in the social media analysis. The PANS analysis provided data from a representative sample of adults and allowed analysis by key population sub-groups. Segmentation allows us to go beyond simple descriptive analysis (males do x/females do y) and understand wider behavioural groups in the population.

PANS comprises a representative sample of c. 2,080 adults in England every month using Kantar's online Profiles Panel[1]. The survey has run continuously since it began in April 2020. Results from survey analysis contained in this report are taken from April to December 2020.

The data used for the segmentation analysis comes from the People and Nature Survey collected between May and December 2020. The aim of the segmentation was to understand how different groups were experiencing nature, their connection to nature, different needs and motivations for spending time in nature and impacts on well-being from being in nature. Segment groups were created using two main axes - nature connection and frequency of visits. The table below shows the full list of questions that were used to create the segments.

[1] https://www.kantar.com/expertise/research-services/panels-and-audiences/kantar-profiles-network

Table 1-1 Questions included in creation of segmentation

Category	Questions
Demographics	Age Gender Number of children currently living in the household Employment status Number of cars/ vehicles in household Whether has a dog
Health and well-being	Whether has any physical or mental health conditions or illnesses lasting or expected to last for 12 months or more ONS Personal well-being questions: How often do you feel lonely? Satisfaction: Overall, how satisfied are you with your life nowadays? Worthwhile: Overall, to what extent do you feel the things you do in your life are worthwhile? Happiness: Overall, how happy did you feel yesterday? Anxiousness: Overall, how anxious did you feel yesterday? Overall, how satisfied are you with your life nowadays
Engagement with nature	How often spent time in green and natural spaces in last 12 months Types of places visited in last 12 months
Nature connection	Agreement: I feel part of nature Being in nature makes me very happy I am taking more time to notice and engage with everyday nature

Six distinct segments of adults were created and are included in this report, outlined below.

Table 1-2 Segment names and descriptions of typical segment members

Segment Name	Segment description
Content but less engaged with nature	Typically 55+, married affluent men in good health and well-being who spend time in nature but don't necessarily feel part of it.
Urbanites with low nature connection	Mostly aged under 40, healthy urban singles, in employment/studying, but with low well-being. Spending time in nature without a strong connection to it.
Sociable nature lovers with busy lives	These are often aged under 40, employed individuals with families that get out in and connect with nature often. In good physical health but reporting high levels of anxiety.
Nature enthusiasts	These are commonly aged 55+ married women with high well-being but sometimes poor health. Living rurally and less often working. Spending a lot of time in nature and feel connected with it.
Nature loving urbanites	These are typically highly educated single women in employment, living in urban spaces and in good health. Feel connected to nature and frequently visit urban green spaces and canals/rivers/lakes.
Infrequent outdoor visitors with medium nature connection	Aged 55+ more often single women with underlying health conditions and not in work. Very low levels of time spent in nature and below-average nature connection.

To categorise these segments, their characteristics and responses were considered versus the total sample. This is described as over or under indexing, and in this report indicates that a response is +/-20% than results for the sample as a whole.

Social Media Analytics were used to understand changes during lockdown in how people discussed outdoor places visited, what associated activities they engaged in, and what benefits they received from doing so.

Kantar used its bespoke STAN (Social Text, AI, and Natural Language) approach (see section 3.1 for more detail) to social and search media from the UK. It covered a timeframe of two distinct periods. Firstly, from January 2019 to February 2020 which covered discussion online in the pre-COVID period. Secondly, from March to December 2020 which covered the COVID period. This allowed a wider period of time than the survey to measure the change in conversation due to the disruption caused by the pandemic. The sources used were Twitter, forums, blogs and professional reviews. In total there were 2.5 million conversations captured. Most conversations (92%) were from Twitter, due to other major social media platforms having 'closed' access to date, while Twitter allows greater analysis of its content.

1.2 Key findings

1.2.1 Visits to green and natural spaces

The People and Nature Survey for England found that visits made to green and natural spaces remained relatively consistent after the initial shock of lockdown and restrictions on time spent outdoors.

Similar to the evidence from the Monitor of Engagement with the Natural Environment (MENE) survey, which ran from 2009-2019, visiting levels were not equal across the adult population. It was more common for White people, men, those with any qualifications, higher income households (annual household income of £50,000 or more) and people with children in their household to have visited any green and natural spaces in the previous 14 days.

Segmentation analysis identified that Sociable nature lovers, Nature enthusiasts and Nature loving urbanites, were more likely than other segments to have visited a green space, reflecting their similarities in high nature connection and an emphasis on nature's positive impact on their well-being during the pandemic.

Urban green spaces were consistently the most visited location each month in the survey and were the most prominent in social media discussions in terms of both total volume and growth of volume of discussions.

The number of visits to coastal blue spaces (beach/other coastline/sea) showed the largest change over time , starting at a relatively low level in spring (April to June 2020), peaking considerably in summer and then remaining relatively high in winter (October to December 2020).

Blue spaces like beaches, other coastline, the sea and rivers, lakes or canals were far less likely to be visited by Black or Black British adults or adults from lower income households than by White British adults or adults from higher income households.

1.2.2 Activities in green and natural spaces

Walking was the most popular activity in the survey (around eight in ten survey respondents had been in the natural environment for a walk), and respondents who were 65 or older were more likely to have undertaken this activity than any other age groups. Walking also had the highest volume of social media conversation over time.

Content but less engaged (85%) and Nature enthusiasts (85%), which were segments that were more likely to have adults aged 55+, were most likely to go on a walk. While Sociable nature lovers with busy lives, who were largely younger than 40 and have children in the household, were least likely (67%) to go on a walk. Sociable nature lovers were more likely to have taken part in all other listed activities in the survey, indicating their lower likelihood of walking was less related to their connection with green spaces, and instead related to their age group and the variety of other activities they took (including playing with children).

Urban green spaces/parks

Conversations on social media about parks and gardens remained at slightly higher levels during the pandemic than in pre-COVID times throughout the year – this highlighted their key role in keeping people connected to the outdoors during the COVID period.

The survey analysis showed that walking remained the most popular activity for respondents visiting urban green spaces, which was also reflected in the social media data. Social media discussion highlighted a growth in volume of posts about passive activities such as sitting, chatting, picnicking, reflecting the use of these spaces for people to connect with each other as well as with nature.

Rural green spaces

Rural green spaces, such as fields, farmlands and forests, grew in importance in social media discussions during the first lockdown and discussions on these spaces have stayed at higher levels than 2019 despite seasonal effects. Overwhelmingly they have been used for playing and exercise.

Nature enthusiasts, a group comprised largely of women aged 55+, were more likely to visit fields, farmlands and countryside than the other segments, while Sociable nature lovers (a group comprised largely of parents with children in the household) were more likely to visit to woodland or forests than adults on average.

Rural blue spaces

Rural blue spaces, such as lakes and some coastal spaces, grew in importance in social media discussions during the first lockdown and discussions stayed at higher levels than 2019 despite seasonal effects.

The People and Nature Survey found that visits to beaches / other coastline / sea were particularly low at the start of lockdown and that visits to blue spaces peaked in the summer. Visits to both inland (river, lakes or canals) and coastal blue spaces (beaches / other coastline / sea) were more common for White adults, higher income adults, adults younger than 40 and adults with children in the household.

Nature loving urbanites (who were least likely to live in a coastal area) were least likely to have visited a blue space, while Content but less engaged (who were more likely to live in a rural area) were more likely to visit the beach than average.

1.2.3 Reasons for visiting green and natural spaces

Gardens

Respondents' main reasons for spending time in the garden were to get fresh air, to do gardening / maintenance and for mental health / well-being. The connection between gardens and mental health increased during the pandemic. This was particularly so for people from lower income households.

In the social media discussions, exercise in the garden became more common. Passive activities, like 'pottering', became more important for helping mental health over time. Discussions around connecting with nature also increased in volume on social media during the pandemic through more discussion of activities like birdwatching and photography of wildlife at home.

Parks/Green spaces

The main reasons for spending time in parks/green spaces were to get fresh air, for physical health and exercise and for mental health and well-being. Adults from higher income households were more likely to visit for physical health and exercise, while those from lower income households were more likely to visit for mental health and well-being reasons.

Those with higher well-being scores for happiness, satisfaction and feelings of life being worthwhile (see section 3.2.2 for a description of the ONS personal well-being measures used in the PANS questionnaire) were more likely to visit greenspaces for physical health and exercise or to connect with nature. Those with lower happiness, satisfaction and feelings of life being worthwhile well-being scores or high anxiety scores were more likely to visit for mental health benefits.

Slower, social activities such as sitting, chatting, picnicking became more prominent in social media discussions. People derived mental health benefits from spending time with others in green spaces.

Nature enthusiasts (who were more likely to be 65+, retired, have a strong nature connection, and have high satisfaction, happiness and worthwhile well-being scores) were most likely to spend time in gardens in order to connect with nature (35%), for their mental health (47%), and to do gardening (63%), Infrequent outdoor visitors with medium nature connection (who were also likely

to be 65+, retired, were less likely to feel part of nature and had lower well-being scores for satisfaction, happiness and worthwhile) were least likely to spend time in gardens for physical health and exercise (13%).

Blue spaces

During lockdown, the survey showed mental health and well-being became a more important reason to visit blue spaces. As blue spaces have become more difficult to access for some, people have been seeking mental health benefits typically derived from blue spaces through online soundscapes (such as recordings of ocean noise).

Content but less connected with nature, a segment that was more likely to be 65+ with no long term illness or disability, were more likely than other segments to cite visiting blue spaces for physical health (73%), Infrequent outdoor visitors with medium nature connection, who in addition to being more likely to have long term illnesses were more likely to have lower well-being scores for satisfaction, happiness and worthwhile, were most likely to visit for mental health (69%). Nature enthusiasts were the segment most likely to cite visiting blue spaces connect with nature (46%).

1.2.4 Online communities

Discussions showing interest in connecting with others, whether physically or virtually, grew in volume and importance on social media during the pandemic. Online communities on Twitter have helped people connect with other like-minded nature enthusiasts, with conversations suggesting that they derive similar positive benefits for their mental health from doing so, even while constrained to a more domestic dimension.

The proportion of adults in the survey that posted online content related to the environment often or always/whenever they had the opportunity increased from 9% to 14% between April and December 2020.

1.2.5 Barriers to engagement

In April 2020, coronavirus/following government rules stopped half of adults from spending time outdoors in the last 14 days. This became less of a barrier to spending time outdoors as lockdown eased in summer/autumn 2020. Similarly, discussion on social media of social distancing and crowding as a barrier to spending time outdoors also decreased following the initial peak in April 2020.

Poor physical health or illness was a barrier for about one in ten survey respondents to spending time outdoors.

2. Introduction

The Monitor of Engagement with the Natural Environment (MENE) survey showed that most people's experience of nature is close to home and in green spaces in towns and cities[2]. Over the last 10 years, health and exercise has become the main reason for spending time in the natural environment. MENE also showed that spending time in nature is good for overall well-being. Additional analysis by Exeter University has shown that spending at least 120 minutes a week in nature is associated with good health and high psychological well-being[3].

One consistent trend in the MENE data is that engagement with nature is unequal; low income, ethnic minority and older age groups (particularly those aged 65+) are less likely to visit the natural environment.[4]

The COVID-19 pandemic and associated restrictions such as lockdowns provided an unprecedented change in people's lives This project was undertaken in order to understand the variety of ways in which different groups had engaged with nature during lockdown. It includes a segmentation of survey data from the People and Nature Survey (PANS) alongside social media analytics which were used to understand the different ways that people interacted with nature, how they discussed those interactions and benefitted from them, and also the barriers to engaging with nature.

This report sets out key findings about people's engagement with nature, how that has changed during COVID-19, and how this differed between different groups across the population. The analysis incorporated PANS data (collected between April and December 2020), including creation of a segmentation of adults' engagement with nature, alongside social media analytics to present a comprehensive view of people's experiences of Nature. A summary of the methods used is in section 2.

The People and Nature Survey for England (PANS) began collecting data just after the first national COVID-19 lockdown and was adapted to monitor the effect of lockdown on people's engagement with nature and how this supported their well-being. Natural England report on survey data monthly and annually.[5][6]

PANS also provides indicators of progress for the 25 Year Environmental Plan on:

1. Perceived quality of landscapes and green infrastructure
2. People's engagement with the natural environment and inequalities in this
3. Pro-environmental attitudes and behaviours
4. Health and well-being benefits associated with using green spaces

The aim was to integrate the survey analysis, segmentation, and social media analysis to provide insight into key research questions relating to:

[2] https://defra.maps.arcgis.com/apps/Cascade/index.html?appid=d5fe6191e3fe400189a3756ab3a4057c

[3] https://doi.org/10.1038/s41598-019-44097-3

[4] https://defra.maps.arcgis.com/apps/Cascade/index.html?appid=d5fe6191e3fe400189a3756ab3a4057c

[5] https://www.gov.uk/government/collections/people-and-nature-survey-for-england#monthly-interim-indicators-year-1-(april-2020-%E2%80%93-march-2021)

[6] https://www.gov.uk/government/collections/people-and-nature-survey-for-england#monthly-indicators-year-2-(april-2021-%E2%80%93-march-2022)

- **Overall visit behaviour** – how often people visit green and natural spaces, how this varies across the population, where people go and what they do, and how this has changed during lockdown.
- **Activities** within urban spaces, rural green spaces and coastal and other blue spaces and how these have changed during lockdown.
- **Reasons for visiting** green and blue spaces and how these have changed during lockdown.
- **Barriers** people face for engagement with nature, how this varies across the population and how these have changed during lockdown.

2.1 Official Statistics designation

In 2020, the People and Nature Survey underwent a rapid regulatory review with the Office for Statistical Regulation to ensure compliance with the Code of Practice for Statistics, and its principles of:

- Trustworthiness: is about having confidence in the people and organisations that produce statistics and data.
- Quality: is about using data and methods that produce assured statistics.
- Value: is about producing statistics that support society's needs for information.

Initial releases from the People and Nature Survey (between April 2020 and March 2021) that used an interim weighting method were released as Experimental Statistics. This status highlighted to users that these Official Statistics were in the National Statistics testing phase and that Natural England was still working on further developing the methodologies used in their production whilst ensuring adherence to the Code of Practice for Statistics (the Code).

However, a bespoke weighting scheme created for the People and Nature Survey has been used for the survey and segmentation data in this report (and general PANS data releases from April 2021 onwards). This means that the survey analysis and segmentation data within this report are of sufficient quality to be designated as Official Statistics[7].

Please note that this only relates to survey and segmentation data in this report and not social media analysis.

[7] http://publications.naturalengland.org.uk/publication/6382837173583872

3. Method

A mixed method approach was taken to analyse the impact of COVID-19 and national lockdowns on people's engagement with nature. This section discusses the methods used, the strengths and limitations of each and how they work together.

3.1 Social Media Analytics

3.1.1 Background

Social media analysis has not traditionally been included in studies related to the natural environment. However, changes in technology, society and analytics possibilities mean that social media analysis presents a viable approach to understanding a range of issues from diverse users. The world of social media provides a wealth of information and data with the potential to add a depth to our evidence base on how different groups in society are discussing these issues, interacting with nature and how they relate to health and the natural environment, and crucially the role that the natural environment has played for different groups during this period of lockdown.

Social Media Analytics were used to understand changes during lockdown in how people discussed outdoor places visited, what associated activities they engaged in, and what benefits they received from doing so.

Key themes explored were experiences of green and natural places during lockdown (the places people talked about and the activities they discussed), how people have discussed experiencing the natural world at home (in their garden, watching birds from their windows, on TV or online, etc) and the role of nature in the context of health and well-being.

3.1.2 Social media analysis methods

Kantar used its bespoke STAN approach to collecting data. The process for STAN begins by creating the 'universe' of data to search. The universe was restricted to social and search media from the UK. It covered a timeframe of two distinct periods. Firstly, there was analysis of social media data between January 2019 and February 2020.This covered discussion online in the pre-COVID period. Secondly, there was discussion between March and December 2020 which covered the COVID period. This allowed a wider period of time than the survey (which began in April 2020 and therefore did not collect any data prior to the COVID pandemic) to measure the change in conversation due to the disruption caused by the pandemic. The sources used were Twitter, forums, blogs and professional reviews. In total there were 2.5 million conversations measured. Most conversations (92%) were from Twitter, this is largely due to the limited access to data from other social media platforms, while Twitter allows greater analysis of its content.

After identifying the universe, the next stage was to structure it by creating a code frame called a taxonomy. The taxonomy allows us more granular analysis looking at specific topics of conversation as well as larger categories containing clusters of terms. The taxonomy was created in partnership between Kantar and Natural England. The taxonomy used the People and Nature Survey questionnaire as a starting point to allow comparison between sources. Building a strong taxonomy is the bedrock of STAN. It enables Kantar to apply natural language processing and advanced analytics. It is built using a top-down approach with several levels of granularity.

- Level 0 – the universe.
- Level 1 – top level categories (such as 'activities', 'benefits', 'spaces').
- Level 2 – 'lenses' – these are areas within each category.

- Level 3 – ‘sub-lenses’ – these are the granular categories within each lens that are analysed to cover a broad theme of conversations.

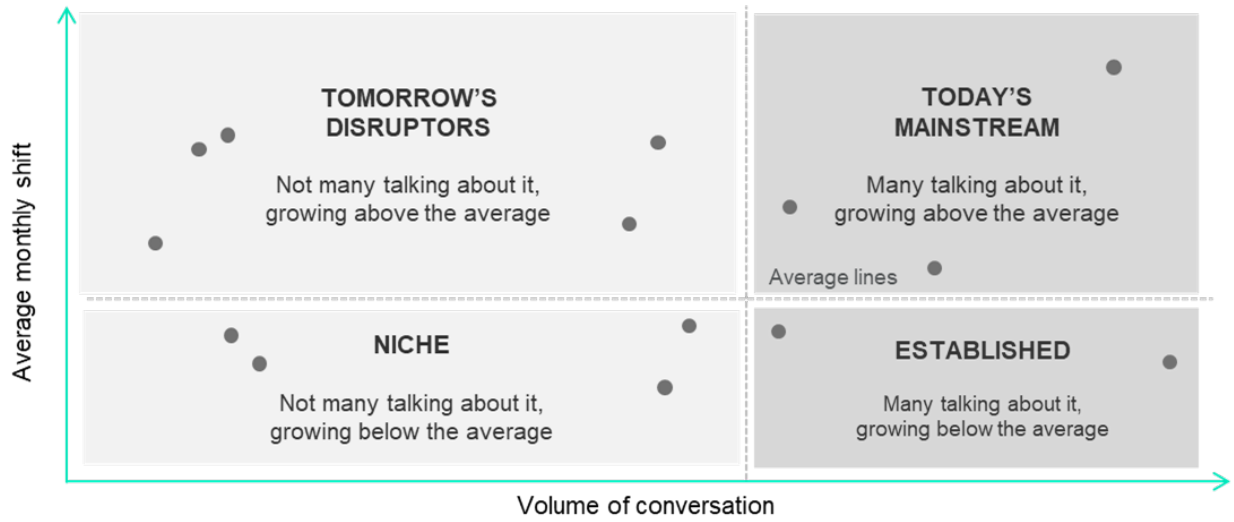
In total 476 lenses were included within the taxonomy.

Following the creation of the taxonomy, an initial search of social media data was undertaken to delve into the data to identify insight and key implications, and decide ‘Deep Dive’ areas to be analysed in more depth.

When STAN looks at the overall data it analyses both the **overall volume** of conversation and the month on month **growth** of each topic over the period.

Topics can be classified as ‘mainstream’, ‘niche’, ‘established’ and ‘disruptors’, as outlined in Figure 3.1. When a topic is classified as ‘mainstream’ it doesn’t mean that we should ignore it or that it is not as important as a disruptive trend, it just means that if we do want to act on that space we need to do it fast as it is something that people are already adopting today, versus something likely to gain momentum tomorrow.

Figure 3-1 STAN analysis framework



3.1.3 Iterative approach to social media analysis

The initial review of the key research questions and volume of discussion identified that urban spaces, rural green and blue spaces and connections to nature were areas to be investigated further. The deep dives were investigated with both social media analysis and analysis of the volume of terms included within the taxonomy that were entered into search engines. As well as viewing the volume (and average monthly change in volume) it also looks at associations and relationships between terms to create a social media ‘index’ for each lens. The social media index value shows which terms have the strongest relationship to each other, regardless of the volume of posts of a given topic.

3.1.4 Benefits and limitations of social media analysis

Some of the benefits of using social media analytics are that it is a quick and flexible way of capturing views from a much larger sample, the detailed taxonomy allows analysis of defined research questions, data is freely accessible from any time period, past or present, a broad range of behaviours & attitudes can be inferred from the same data and it uses 'real language', not just limited by survey pre-codes which can allow Natural England to review how best to communicate with the public in future engagement. Though it should be noted that analysis remains partly limited to the scope and makeup of this taxonomy.

With all methods of research there are limitations. For social media analytics, the data is mostly reflective of Twitter's user demographics which skews toward a younger audience[8]. Caution was taken when interpreting results (such as highlighting links and associations between terms used rather than inferring causal relationships), and this is a key reason why a mixed method approach using social media analytics in partnership with survey results, which are taken from a representative sample of the English population, was taken.

Additionally, social media analytics does not allow you to reliably identify or profile results by demographic groups. Attempts were made to see if analysis could review results by different groups of the population (to uncover issues around inclusivity in nature), but the base sizes of conversation were too small to use reliably.

3.2 Survey analysis

To investigate how adult's engagement with green and natural spaces changed across the population during the pandemic, Natural England and Kantar:

- Developed a set of questionnaire measures.
- Identified population subgroups of interest (see Section 1).
- Reviewed responses from April 2020 (near the start of lockdown) to December 2020 from over 18,0000 survey respondents.

3.2.1 Analysis variables used

To investigate how different groups engage with nature and potential inequalities in access to green and natural spaces, PANS data was checked across a number of survey questions for statistically significant differences between the following demographic groups:

Table 3-1 Survey analysis variables

Age	16-24 25-39 40-54 55-64 65+
Health	Long term illness

[8] https://doi.org/10.1177/2053168017720008

	No long term illness
Annual household income	£ 0 to £14,999 £15,000 to £49,999 £50,000 or more
Gender	Male Female Identify in another way
Working status	In Employment Self-Employed Unemployed Not working (i.e. retired) Student
Ethnicity ** For some questions with small base sizes all ethnic minority groups are reported as one group. Please see section 2.1 of the survey methods and limitations note for further information[9].*	White (including White minorities) Mixed or Multiple ethnicities Asian/Asian British Black/Black British Any other ethnic background
Well-being – using ONS harmonised measures[10] (see more below)	Happy (low, mid, high) Satisfied (low, mid, high) Worthwhile (low, mid, high) Worried or anxious (low, mid, high)
Highest qualification level	A university degree or above Any other qualifications No qualifications
Whether has children in the household	Children in the house No children in the house
Marital status	Married Unmarried
Whether has a dog	Own a dog Do not own a dog

[9] https://www.gov.uk/government/publications/survey-methods-and-technical-details/methods-and-limitations

[10] https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing

Segment (see section 2.1.3 below for more information)	Content but less engaged with nature Urbanites with low nature connection Sociable nature lovers with busy lives Nature enthusiasts Nature loving urbanites Infrequent outdoor visitors with medium nature connection

There are a number of survey questions which cover the impact of coronavirus (particularly on barriers to engagement) and these were included to see whether concerns and barriers increased or decreased over time. Some of these questions were introduced in May 2020.

A summary of the methods and limitations of the People and Nature Survey is available on The People and Nature survey GOV.UK collections page.[11]

3.2.2 ONS harmonised personal well-being measures

The survey analysis includes the ONS harmonised personal well-being questions[12]. These are four survey questions to measure personal well-being. People are asked to respond to the questions on a scale from 0 to 10 where 0 is "not at all" and 10 is "completely". The questions are:

- Satisfaction: Overall, how satisfied are you with your life nowadays?
- Worthwhile: Overall, to what extent do you feel the things you do in your life are worthwhile?
- Happiness: Overall, how happy did you feel yesterday?
- Anxiousness: Overall, how anxious did you feel yesterday?

In this report, satisfaction, worthwhile and happiness, responses of 0 to 4 are categorised as 'Low', 5 to 6 are 'medium', 7 to 10 are 'high' (the data can also commonly further into 7 to 8 high, 9 to 10 very high but has not been done here for simplicity). Anxiousness is banded with responses of 0 to 3 categorised as 'Low', 4 to 5 are 'medium' and 6 to 10 are 'high'.

Data is weighted to be representative of the population in England.

The benefits of using PANS is that it provides a more representative sample of the population than social media analysis, it uses a tested and standardised list of attitudes and behaviours and it allows understanding of what people did rather than 'talked' about. However, data is limited to survey questions, questions may not be worded using conversational language, and while it is representative of most adults, similar to the social media analysis, the survey does not include adults who are not online and there is no 'Pre-COVID' period to track impact.

3.3 Segmentation

A segmentation was created using existing survey data from the People and Nature Survey. The data used for the segmentation analysis comes from the People and Nature Survey collected between May and December 2020. The aim of the segmentation was to understand how different

[11] https://www.gov.uk/government/publications/survey-methods-and-technical-details/methods-and-limitations

[12] https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/methodologies/personalwellbeingfrequentlyaskedquestions

groups in the population were experiencing nature, their connection to nature, different needs and motivations and impacts on well-being.

The purpose of any segmentation analysis is to identify sub-groups of objects that are as homogeneous as possible within each segment, and as heterogeneous as possible between segments. The general process involves splitting the data based on a specific set of variables (inputs) and then profiling the resulting segments on the input variables, as well as any other variables of interest.

The overall purpose of this segmentation was to identify, and profile key groups and their experiences related to engagement with green and natural spaces. These groups included:

Table 3-2 Key groups identified for the segmentation

Older people	Disproportionately shielding (i.e., over 70s) / at high mortality risk of Covid-19.[13]
People with poor health	Disproportionately shielding / at higher risk of infection or serious illness from coronavirus.[14]
People from ethnic minority groups	Disproportionately at risk[15] / less likely to be able to access nature.[16]
People from low incomes / areas of deprivation	Disproportionately at risk[17] / less likely to be able to access nature.[18]
Young people	More likely to be affected by well-being impacts / isolation[19].
People with children in the household.	Households with children most frequently reported they were worried or very worried about the effect of the coronavirus (COVID-19) pandemic on their lives[20].

[13] https://www.gov.uk/government/publications/covid-19-reported-sars-cov-2-deaths-in-england/covid-19-confirmed-deaths-in-england-report

[14] https://www.nhs.uk/conditions/coronavirus-covid-19/people-at-higher-risk/who-is-at-high-risk-from-coronavirus-clinically-extremely-vulnerable/

[15] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf

[16] https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/updatingethniccontrastsindeathsinvolvingthecoronaviruscovid19englandandwales/24january2020to31march2021

[17] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf

[18] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904439/Improving_access_to_greenspace_2020_review.pdf

[19] https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronaviruscovid19latestinsights/wellbeing

[20] https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/bulletins/coronavirusandthesocialimpactsonhouseholdsinsubnationalareasingreatbritain/2020and2021

3.3.1 Sample definition

The data used for the segmentation analysis comes from the People and Nature Survey for England and was collected between May and December 2020. April survey data was not included as many of the survey measures tracking the impact of COVID-19 on engagement with nature were not added to the survey until May 2020[21].

The total unweighted sample size collected in this period was 16,662. However, due to the modular nature of the survey, not all respondents were used to derive the segments. Different modules were evaluated according to their relevance to the segmentation and the share of respondents answering the module. The final sample definition was then all those who answered Module 2 of the survey about their specific visit in the last 14 days, resulting in a sample size of 13,148. This represents about 80% of the total sample from May to December 2020 and is therefore still robust.

3.3.2 Missing (not at random) data

The modular structure of the survey means that respondents are routed through the survey and see different sets of questions, resulting in 'missing not at random' data. For segmentation analysis it is essential that all respondents have responded to a consistent set of questions so the data was filtered on those who answered all the selected questions that made up the segmentation.

3.3.3 Missing and random data

A lot of the key questions include 'Prefer not to say' and/or 'Don't know' answer codes. Data was audited to determine levels of these 'missing at random' data points. Generally, it is possible to include a default answer for such questions, but it is not desirable to do this too often. If there is a lot of data missing either for a specific question, or many questions for any given respondent, including default answers too often risks degrading the quality of the final segments. It should be noted that there are typically low levels of non-response (Don't know, Prefer not to say) for PANS.

Due to the high number of questions including these types of answers, no data was imputed. The chosen methodology (Non-linear canonical correlation, see below for further explanations) can deal with a low proportion of missing data.

3.3.4 Selecting the segmentation inputs

Several criteria were taken into consideration when selecting which variables to include in the analysis:

- They should be relevant and genuinely connected with meeting the objectives of the study.
- They should be answered by all respondents.
- They should show clear differences between different groups of people.

Following a review of the questionnaire and discussion of the purpose of the segmentation, as well as following recommendations from the MENE strategic review[22], four topics were selected to be included: nature engagement and connection, COVID-19 impact, health and well-being, and demographics.

[21] For further details on the survey please see https://www.gov.uk/government/collections/people-and-nature-survey-for-england .

[22] http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=19989&FromSearch=Y&Publisher=1&SearchText=BE0132&SortString=ProjectCode&SortOrder=Asc&Paging=10%23Description

Other variables which were of interest or relevance to the analysis outcomes, but were not ideal for inclusion in the segmentation process itself, were used for profiling the segments once they had been created.

3.3.5 Refining the segmentation inputs

After selecting the segmentation inputs, the next stage in the process is an exercise to reduce dimensionality in the data. This technique takes a set of variables and converts them into a new reduced set of variables which represent the information contained in the original set.

Due to the nature of the inputs being a mix of different variable types and to accommodate missing at random data, an advanced type of factor analysis, non-linear canonical correlation (NLCC), was used for dimensionality reduction. The four topics mentioned before were selected as individual sets within the NLCC.

3.3.6 The segmentation process

The dimensions identified with the NLCC approach were then used within a K-means clustering technique. K-means divides data objects into non-overlapping clusters such that each data object is in exactly one cluster. The clusters are represented by their centroids and the objects are assigned to the closest centroid (centre-based/ prototype-based clustering). There are a number of proximity/distance measures available, Euclidean distance was used here. As K-means can be sensitive to the initial conditions we take this in account when we create the segments to ensure they are stable and replicable.

The aim of this technique is to partition the respondents into clusters (segments) of respondents, while trying to maximize the heterogeneity (i.e. differences) between segments and maximize the homogeneity (i.e. similarities) within segments, in terms of the input variables. Segmentation is an iterative process and we trialled multiple runs to obtain a different number of clusters on various combinations of the inputs, and clustering algorithms. In the light of future-proofing the segmentation, it was key to investigate solutions including and excluding Covid-19 impact. A number of alternative segmentation solutions were thus created and profiled.

3.3.7 Choosing a solution

The segments must capture the key variations between people that exist in the total 'population'. Too few segments will mean that the solution seems quite indistinct and that important differences are being overlooked. Selecting too many segments, however, may overcomplicate the solution and overemphasise small differences between survey respondents. While the numbers behind the solutions are used to verify that any selection is acceptable from a pure analytical point of view, the final decision is very much a practical one: To achieve the balance between usefulness and usability. The process of choosing the segmentation solution was iterative, with several approaches presented to Natural England before final segmentations were chosen.

One can then profile the new categorical segment variable against other variables of interest to evaluate the segmentation. By profiling, we look at the average score (or some other summary statistic) of numeric variables, and at the distribution of categorical variables within each of the segments. We evaluate segmentations using these profiling tables. Conceptually, we look for segments that make sense from a communication perspective. Quantitatively, we check that the differences between segments are large enough (large is > +/- 20%).

Some further criteria for evaluation of the segments:

Table 3-3 Criteria for segment evaluation

Identifiability	Can I find/recognise the targeted persons in the population?
Substantiality	Is the segment large enough to have a critical volume?
Accessibility	Can I reach the target via communication?
Stability	Are the segments reasonably stable over time?
Responsiveness	Does a segment respond homogeneously to marketing efforts?
Actionability	Does the segmentation provide guidance for decision making?

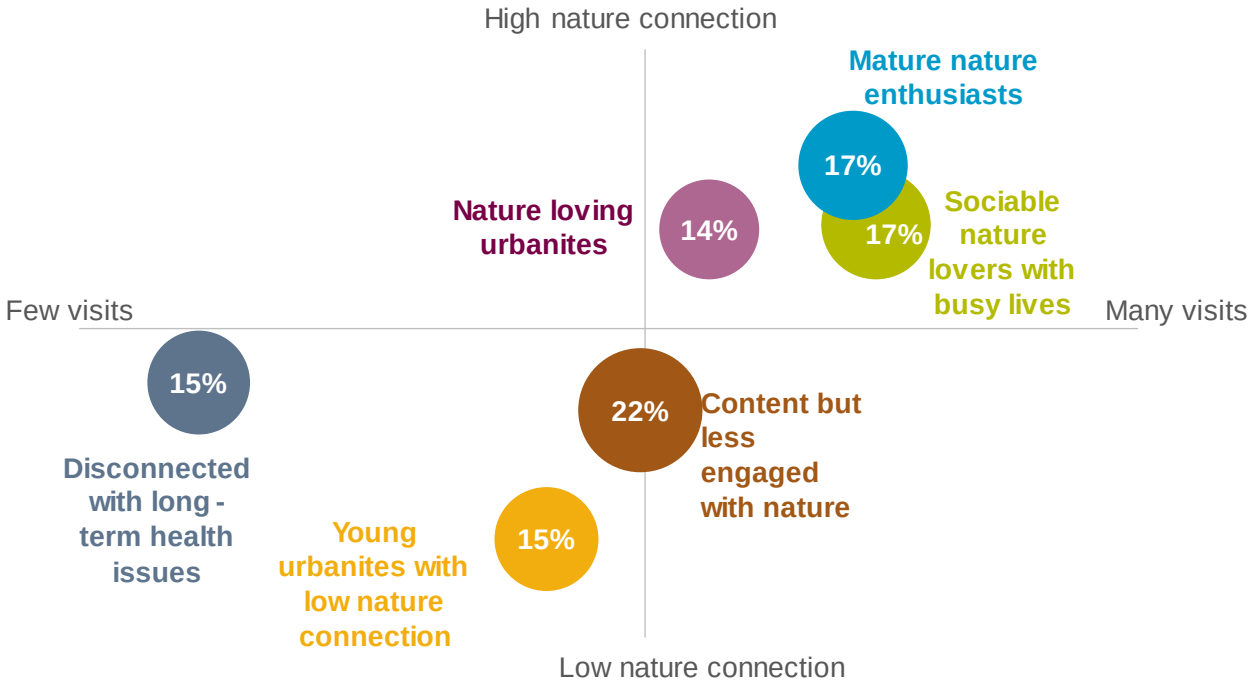
3.3.8 Final segmentation solution

After development and discussion with Natural England the final segments were created. Segment groups were created using two main axes - nature connection and frequency of visits. Six distinct segments of adults were created. Further details of the segments are in annex 1. The descriptions below provide the size of each segment and a summary of the typical clusters of adults most likely to be found within each segment.

- Content but less engaged with nature (22% of population)
    - Typically aged 55+, married affluent men in good health and well-being who spend time in nature but don't necessarily feel part of it. Average frequency of visiting green spaces – engagement with nature has only been moderately improved by COVID-19.
- Urbanites with low nature connection (15% of population)
    - Mostly young and healthy urban singles, in employment/studying, but with low well-being. Spending time in nature without a strong connection to it. COVID-19 has had a moderate impact on positive engagement with nature.
- Sociable nature lovers with busy lives (17% of population)
    - These are often young employed individuals with families that get out in and connect with nature often. In good physical health but feeling anxious. Feel connected with nature and have engaged with it more and think that it has been beneficial to their well-being during COVID-19.
- Nature enthusiasts (17% of population)
    - These are commonly aged 55 and older married women with high wellbeing but sometimes poor health. Living rurally and less often working. Spending a lot of time in nature and feel connected with it. During COVID-19 their engagement with nature has increased and they think it has been very important for their well-being.
- Nature loving urbanites (14% of population)
    - These are typically highly educated single women in employment, living in urban spaces and in good health. Feel connected to nature and frequently visit urban green spaces and canals/rivers/lakes. They've been visiting green spaces more frequently since COVID-19 and this is seen as beneficial for their well-being.
- Infrequent outdoor visitors with medium nature connection (15% of population)
    - These are often aged 55 and older, more often single women with underlying health conditions and not in work. Very low levels of time spent in nature and below-average nature connection. Positive engagement with nature has been minimally changed by COVID-19.

Figure 3-2 below shows how the segments line up on the axes of nature connection and frequency of visits

Figure 3-2 Segments plotted on an axes of nature connection and frequency of visits to green and natural spaces in the last 14 days



The segments allow us to understand how different groups were experiencing nature and their different needs for access and impacts on well-being. Using existing data from the survey allows a replicable approach which can be repeated over time. However, it is limited to survey respondents and while it allows us to say what people do, it can only provide insight in relation to the survey questions investigated. There are a number of survey questions which provide data about the motivations people have for spending time in green and natural spaces (or the barriers they face). However, these were not included in the segmentation as they are asked of a reduced sample size.

To categorise these segments, their characteristics and responses are considered versus the total sample. This is described as over or under indexing, and in this report indicates that a response is +/-20% than the total sample. For example:

Content but less engaged with nature over indexes as male (65%), meaning it is more than **1.2 times** the survey sample as a whole (49%).

Or

Content but less engaged with nature under indexes as female (35%), meaning it is less than **0.8 times** the survey sample as a whole (51%).

3.4 Benefits of mixed method analysis

The approach was taken to use multiple sources of data so that the benefits of each source would enrich insights.

Social media analysis:

- Allows wider, longer data capture than survey.
- Can provide different dimensions around how people connect with nature and benefits of time spent outdoors.
- Allows for greater freedom in connections between locations and activities than the survey.
- No control over representativeness of sample.

Survey descriptive analysis:

- Provides data from a representative sample of adults.
- Collects data about specific locations visited/ activities/ barriers/ nature connection.
- Allows for analysis by key population groups.

The survey segmentation

- Allows us to go beyond simple descriptive analysis (males do x/females do y) and understand wider behavioural groups in the population.
- It is an approach that can be replicated over time to see if segments grow or shrink.

3.5 Focus on national lockdowns

The mixed method approach was used to gain a national level picture, therefore, effects of lockdown were investigated according to timings of national lockdown restrictions in England. We acknowledge that there were specific additional local restrictions which may have also had an impact on engagement with the outdoors.

4. Overall visit behaviour

4.1 Summary

Visits in the last 14 days

- Visiting levels remained at a relatively consistent level in the survey data after the initial shock of lockdown and restrictions on time spent outdoors.
- Like the evidence from MENE, visiting levels were not equal across the population. It was more common for White adults, people from higher income households and people with children in their household to have visited any green and natural spaces in the previous 14 days.
- Sociable nature lovers, Nature enthusiasts, and Nature loving urbanites, were more likely than other segments to have visited a green space, reflecting their similarities in a high nature connection and an emphasis on nature's positive impact on their well-being during the pandemic.

Green and natural spaces visited

- Urban green spaces were consistently the most visited location each month in the survey and were the most prominent in social media discussions in terms of both total volume and growth of volume of discussions.
- Visits to coastal space spaces (beach/other coastline/sea) saw the largest change over time in the survey. They were at a relatively low level in spring (Q2 – April to June 2020) then beaches peaked considerably in Q3 (July to September 2020) and remained high in Q4 (October – December 2020).
- Blue spaces (beach/other coastline/sea and river/lake/canal) were less likely to be visited by Black adults, as well as adults from households where income was less than £50,000 according to the survey.

Activities during most recent visit to green and natural spaces

- Walking was the most popular activity in the survey and across all segments and had the highest volume of social media conversation over the time period captured (January 2019-December 2020).
- Around eight in ten survey respondents had been in the natural environment for a walk, reflecting the high ratio of conversations surrounding the activity in the social media analysis.
- Content but less engaged (85%) and Nature enthusiasts (85%) were the segments most likely to go on a walk. Sociable nature lovers with busy lives were least likely to go for a walk (67%), though they indexed highly across all other activities.

4.2 Visits to green and natural spaces in the previous 14 days

The following discusses the proportion of adults who reported any visits to green and natural spaces in the previous 14 days. The proportion of adults with any visits to green and natural spaces in the previous 14 days started at just under half (49%) in April, during the first national lockdown. However, after April, this proportion increased and was consistently above 60% for most of the rest of the year. The proportion of adults visiting peaked in September at over two-thirds of respondents (68%). Visits then decreased towards the end of the year during autumn and winter

and as localised COVID lockdowns and tiers came into place. However, adult visits to green and natural spaces remained substantially higher in comparison to the start of lockdown in April.

Figure 4-1 Proportion of adults with visits to green and natural spaces in previous 14 days increased from April

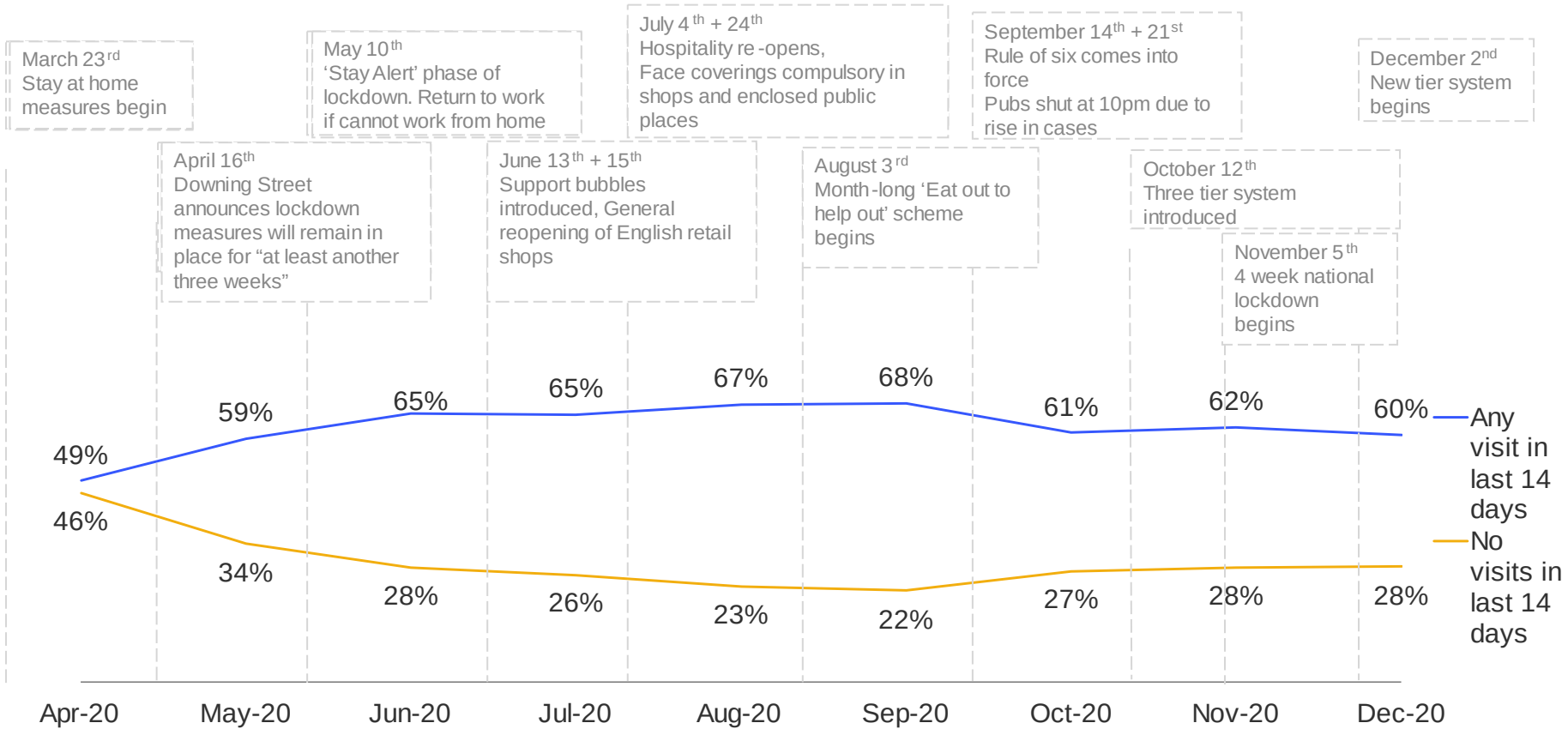


Figure notes

Source:

Q6 (NoOfVisits): How many times, if at all, did you make this type of visit to green and natural spaces in the last 14 days?

(1) Data collected between April 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 1,868 (April 2020), 1,898 (May 2020), 1,872 (June 2020), 1,889 (July 2020), 1,856 (August 2020), 1,866 (September 2020) 1,854 (October 2020), 1,869 (November 2020), 1863 (December 2020) respondents

Similar to the trends seen in MENE, there were consistent patterns when it comes to groups in the population accessing green and natural spaces in PANS. Looking into the survey demographics demonstrated some key differences in visit data in PANS between April and December 2020.

- Black and Black British adults were significantly less likely to have visited (53%) a green and natural space than White British adults (63%).
- The higher the annual household income the more likely someone was to visit green and natural spaces in the previous 14 days. Three-quarters (43%) of adults from households with an income of £50,000 or more visited a green and natural space in the previous 14 days, which was significantly higher than those from households with annual incomes of £0 to 14,999 (46%) and £15,000 to £49,999 (61%)
- Adults aged 65+ were significantly less likely to have had a visit in the previous 14 days (55%) than all other age groups.
- Those with high well-being scores in satisfaction (69%), feeling like life was worthwhile (68%), and happiness (67%), were significantly more likely to have visited in the previous 14 days than those with low well-being scores.
- Men were significantly more likely to have visited green and natural spaces in the previous 14 days than women (64% and 59%) respectively.

Across segments, Sociable nature lovers (84%), Nature enthusiasts (82%), and Nature loving urbanites (82%), were more likely have visited a green space. These segments indexed highly on their level of nature connection on the whole, and placed an emphasis on well-being in these spaces, for example Sociable nature lovers, Nature enthusiasts and Nature loving urbanites were more likely to agree than the total population that visiting local green and natural spaces has been even more important to their well-being over the pandemic (55%, 67%, 60% respectively). Conversely, those who were Infrequent outdoor visitors with medium nature connection were least likely to have visited a green and natural space (22%) followed by Urbanites with low nature connection (59%), both of whom indexed lower than average on well-being and nature metrics.

4.3 Green and natural spaces visited

When looking at the types of places visited in the last month (Figure 4.3), the data from the survey and the social media analysis showed a fairly consistent pattern. According to the survey, urban green spaces were consistently the most visited location across quarters (45% in Q2, 51% in Q3 and 50% in Q4). Around one in three people had visited fields, farmland and countryside or woodland and forest. The proportions visiting blue spaces peaked in the summer, particularly beach/other coastline/sea (28% in Q3). Visits to beach/other coastline/sea were actually higher in Q4 (October to December) at 23% than Q2 (April to June) at 17%, indicating an impact of lockdown restrictions on visits to the coast in Q2.

Figure 4-2 Green and natural spaces visited in the last month. Urban green spaces were the most commonly visited site.

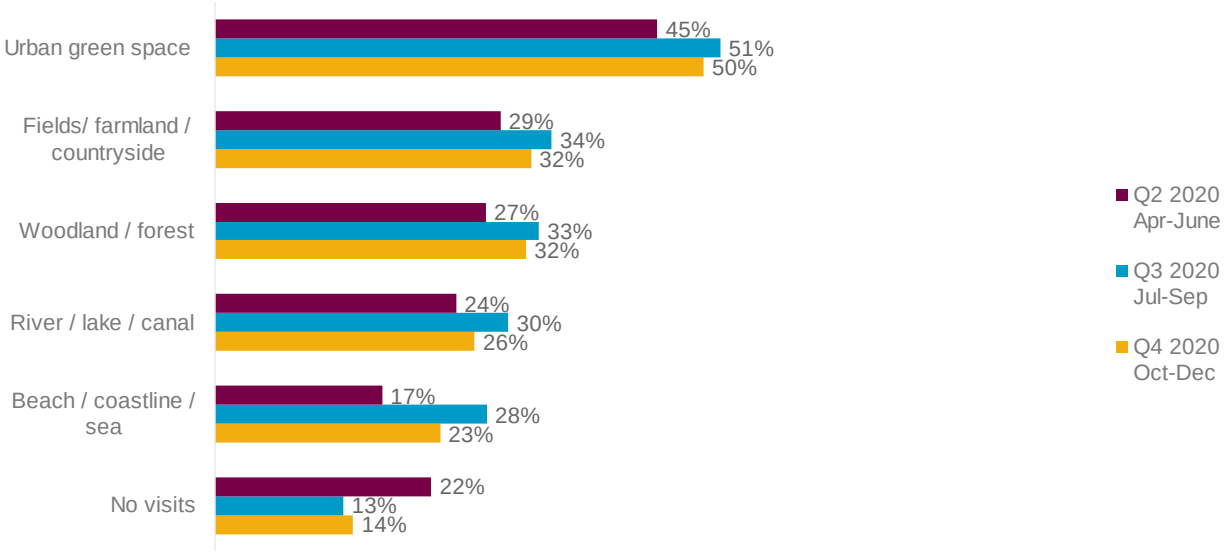


Figure notes

Source:

Q2 (M1_Q2) Which of the following type(s) of green and natural spaces have you visited during the last month?

(1) Data collected between April 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 5,638 (Q2 April-June 2020), 5,611 (Q3 July-September 2020), 5,586 (Q4 October-December 2020) respondents

With the exception of Sociable nature lovers, visits to urban green spaces seem to be related to whether the segment was more likely to live in either urban or rural spaces. Where rural living is high, for example among Nature enthusiasts, respondents were less likely to visit urban green spaces. While those who were less likely to live in rural spaces will either be more likely to visit urban green spaces, or less likely to have visited rural spaces such as fields, farmland and countryside. This is the case for Nature loving urbanites, Urbanites with low nature connection and Infrequent outdoor visitors with medium nature connection. As mentioned, the exception to this is Sociable nature lovers, who remain less likely to have visited urban green spaces (even though they are neither more or less likely than average to live in urban areas), in favour of woodland or forest.

There was a similar picture in the social media analysis. In general, the order of the most frequent spaces discussed has remained consistent between the pre-COVID and COVID periods (see Annex Figure A2.1 for more information on most commonly discussed places). Urban environments like parks and urban gardens were already the most commonly discussed places to visit in nature before the pandemic, and during the pandemic they continued to grow in prominence (Figure 4-4). Conversations about rural spaces, such as fields and farmland, or woodland and forests, have grown less but are still showing an upward trend. Although not as much as parks and gardens, rural spaces such as beaches and forests have also gained increased attention – with tourism options limited, staycations become more popular as people sought out opportunities for leisure and travel in nature.

Figure 4-3 Social media posts related to garden or parks show peak at first national lockdown

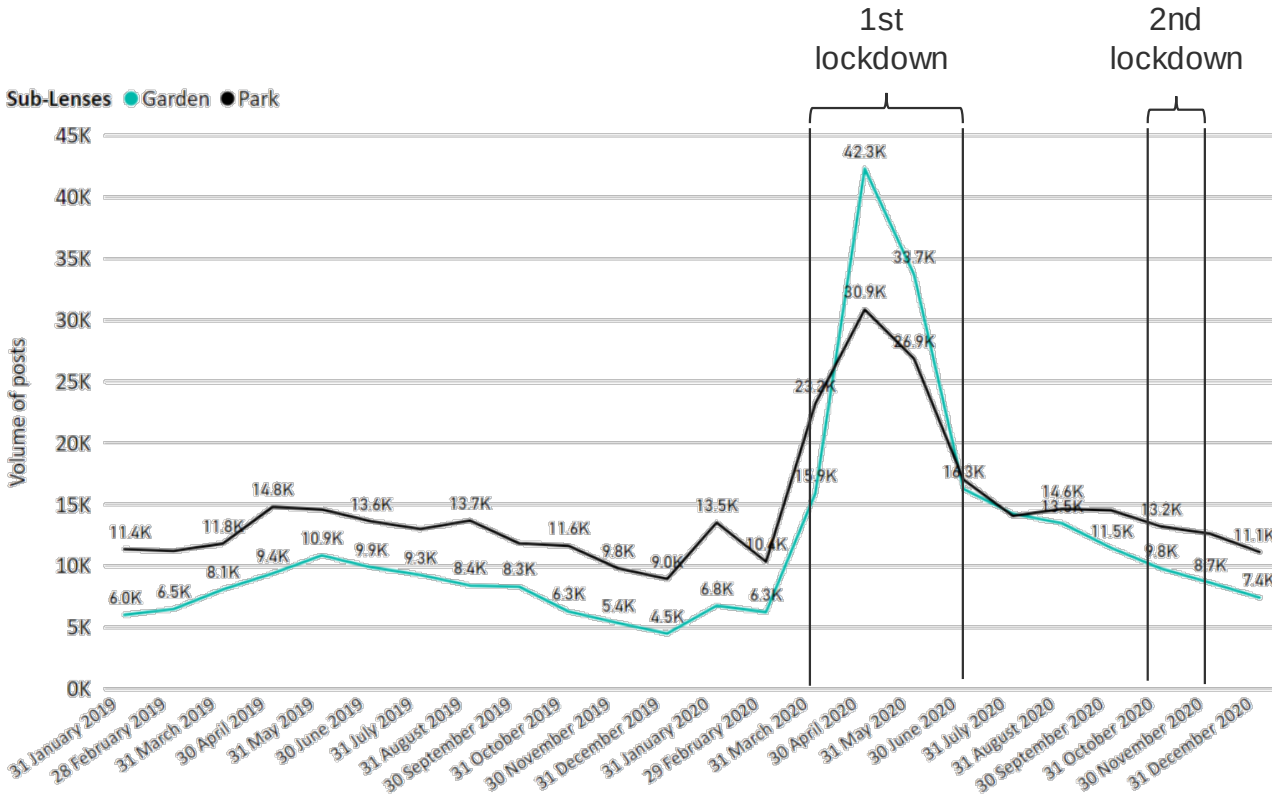


Figure notes

Source:

(1) All social posts related to L3: Garden or L3: Park

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

When looking at who was more likely to visit different green and natural spaces in the survey data:

- Similar to having any recent visits in the previous 14 days, across all places, people from households with annual income of £50,000 or more were more likely to visit than people from households with annual income below £50,000.
- Men were consistently more likely to have visited all places compared to women with the exception of beach, other coastline or sea, where visit rates were similar.
- Asian or Asian British respondents were most likely to have visited an urban green space (54%), grounds of a historic property or country park (17%), an allotment or community garden (13%) and a hill, mountain or moorland (14%). White respondents were most likely to visit woodlands or forest (32%), river, lake or canal (27%), beach/other coastline/sea (24%) and fields, farmlands or countryside (34%).
- When viewing the segments, Sociable nature lovers with busy lives (who were more likely to have children) were most likely to visit the majority of places compared to other segments.
- Nature loving urbanites, a group that is more likely to comprise single respondents, women, and those living in urban areas, were most likely to visit urban green spaces (88%).
- Nature enthusiasts were most likely to visit rural spaces, such as fields, farmland or countryside (58%). This segment, alongside the Content but less engaged segment, over index on living rurally, though only around two in ten (22%) of the latter segment had visited

rural green spaces. Between these segments, Nature enthusiasts were more likely to be aged 55+, married women, while content but less engaged were aged 55+ married men.

4.4 Overall activities in green and natural spaces

Walking was cited by just over eight in ten survey respondents as the activity they undertook on their most recent visit to green and natural spaces (Figure 4-5). This compliments findings from the social media analysis where there was a high ratio of conversations about walking.

One in four reported wildlife watching, which remained at a consistent level across the year's differing levels of lockdown restrictions. Eating or drinking out/Picnicking and playing with children peaked in summer (18% and 13% respectively in Q3 – July to September).

Figure 4-4 Walking was the most common activity during the most recent visit to green and natural spaces

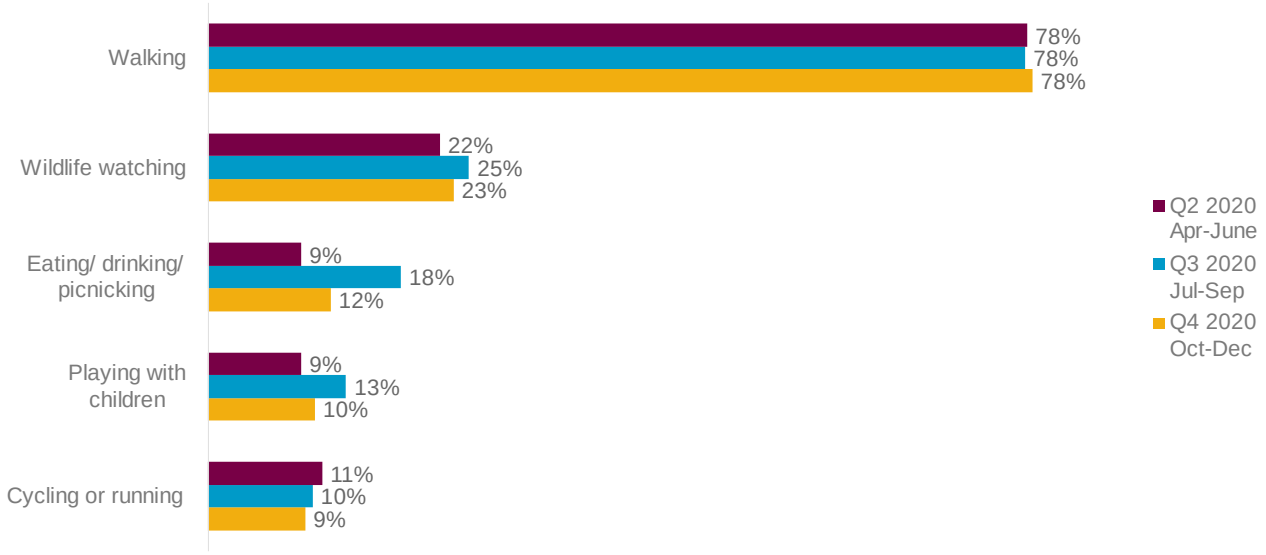


Figure notes

Source:

Q18 (M2A_Q8A) Which of these activities, if any, did you do on this specific visit?

(1) Data collected between April 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 3,279 (Q2 April-June 2020), 3,870 (Q3 July-September 2020), 3,494 (Q4 October-December 2020) respondents

When looking at how activities varied:

- 16 to 24 and 25 to 39 year olds were more likely to participate in a broad range of activities than older respondents). For example, eating drinking out/picnicking was more common among younger adults (16 to 24: 22%, 25 to 34: 19%) in comparison to those aged 65+ (9%). Whereas respondents who were 65+ were more likely to be walking (65+: 85%, 16 to 24: 66%) or wildlife watching (65+: 26%, 16 to 24:17%) than adults younger than 65.
- Respondents with children in the household were more likely to have done all activities than those without children, with the exception of walking (children in household: 68%, no children in household: 82%).

- Generally Asian or Asian British and to a lesser extent Black or Black British respondents that had any visits in the previous 14 days were more likely to partake in a variety of activities compared to other ethnicities. White respondents reporting walking to a greater extent (80% versus Black or Black British 48%).
- Sociable nature lovers were the segment most likely to have done a larger variety of activities, i.e. eating or drinking out/picnicking, playing with children, cycling or running. As previously mentioned, individuals in this segment were most likely to have children in the household, which may influence the variety of activities they undertake. Content but less engaged (85%), Nature enthusiasts (85%) and Nature loving urbanites (81%) were most likely to go on a walk, though this was the most popular activity across all segments.

Section 5 (below) goes into more detail about activities in urban spaces, rural green spaces and rural blue spaces.

Comparing conversations about nature before and during the COVID pandemic, there was a strong increase in mentions of walking, as well as increased interest in gardens and parks, all of which had a high average monthly shift alongside a high volume of conversation, indicating that these were already very common activities discussed before the pandemic, as well as seeing the largest growth during the pandemic (see annex Figure A2.1 for a display of the overall volume and average monthly growth of each) as people sought out light exercise and a connection to nature in their immediate proximity with travel restricted. Lighter forms of activity gained prominence as more people discussed venturing outdoors to keep on top of their physical and mental health. While running was still the second most discussed activity, the ratio of conversations about walking was much higher.

5. Activities in green and natural spaces

5.1 Summary

5.1.1 Urban green spaces/parks

Conversations about parks and gardens remained at slightly higher levels during the pandemic than before the pandemic (the social media analysis captured data from January 2019 onwards) throughout the year, coupled with survey data displaying a consistent number of visits to urban green spaces across the period, indicating their key role in keeping people connected to the outdoors during the COVID period. In the survey, walking remained the most popular activity for respondents visiting urban green spaces (about eight in ten respondents walked in urban green spaces each quarter). While 'active' pursuits (e.g. cycling or running) remained constant from April to December 2020, slower' activities like wildlife watching or eating or drinking out/ picnicking increased over time in the survey.

Similarly, according to social media analysis, the key activities that grew in volumes of discussion and became more important during COVID were commonly slower and more social activities like 'sitting', 'chatting', 'picnic' and 'playing'. Similarly in the survey data, 'active' pursuits (cycling/running) didn't change from around one in ten respondents across the survey, 'slower' activities like wildlife watching or picnicking increased over time.

5.1.2 Rural green spaces

Rural green spaces, such as fields, farmlands, and forests, grew in importance in social media discussions. During the first lockdown, conversations about these rural green spaces stayed at higher levels than 2019 and have seemingly not been subject to previously seen seasonal effects. Overwhelmingly, rural green spaces have been used for playing and exercise.

From the segmentation, Nature enthusiasts, a group comprised largely of women aged 55 or older, were most likely to visit fields and farmlands, while Sociable nature lovers over indexed in their visits to woodland or forests, a group comprised largely of parents with children in the household.

5.1.3 Rural blue spaces

Rural blue spaces, such as lakes and coastal spaces, grew in importance in social media discussions during the first lockdown and stayed at higher levels compared to 2019 despite seasonal effects (in MENE, visits peak during summer and fall in autumn and winter[23]).

There appeared to be seasonal and national lockdown restriction effects on social media discussions and survey responses in regard to rural blue spaces. In the survey, visits to blue spaces generally peaked in the summer. Visits to beach/other coastline/sea were particularly low at the start of lockdown (May – June 2020), increasing sharply to its peak in the following quarter (July – September 2020). While this is not unexpected due to the seasonal nature of blue spaces, the volume of discussions in summer 2020 was far higher than in 2019, possibly due to the impact of fewer people travelling abroad and pent-up demand from lockdown easing.

Visits to both inland and coastal blue spaces were more common for White adults, higher income adults, adults younger than 40 and adults with children in the household.

[23] http://publications.naturalengland.org.uk/publication/4955553534312448

Within the segmentation, Nature loving urbanites (who by nature of their location were least likely to live in a coastal area) were least likely to have visited a blue space, while Content but less engaged (who were more likely to be rural) were more likely to visit the beach than average.

5.2 Urban green spaces

Urban green spaces and walking were both the most common locations and activities overall in the survey (see Section 3). Relative to other spaces, urban green environments such as parks were already discussed frequently before the pandemic. In addition, social media analysis shows walking and gardens had the strongest growth in conversations during the COVID period (although conversations about gardens returned to pre-COVID levels by the end of 2020) (Figure 5-1). This implies a focus on nearby spaces, shown in the growth of conversations about gardens, as well as light exercise in urban spaces, indicated in the growth of conversations about parks and walking (annex Figure A2.1).

Despite showing the strongest growth over time, discussions of urban greenspaces gained prominence and peaked during the first lockdown and subsequently decreased towards pre-COVID-19 levels. indicating an increased focus on these spaces from March to June in 2020 when restrictions on movement, which required everyone to stay at home apart from for a limited number of reasons, were largely still in force (restrictions on movement were eased on 10th May). As lockdown eased, volumes of searches on search engine increased above 2019 summer levels across a variety of activities such as parks and zoos as the country emerged from the first lockdown starved of activities.

Figure 5-1 Social media posts related to garden or parks peaked during the first national lockdown

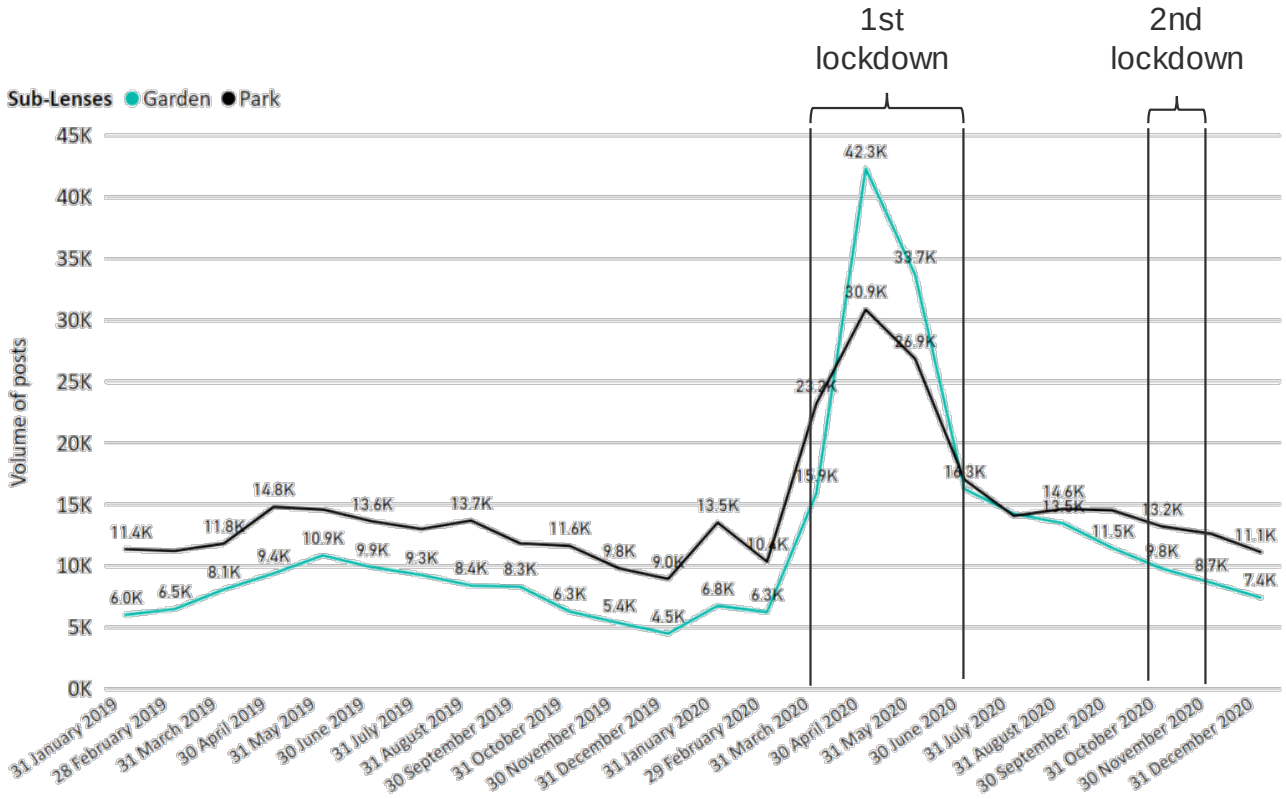


Figure notes

Source:

(1) All social posts related to L3: Garden or L3: Park

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

In the survey, walking remained the most popular activity for respondents visiting urban spaces (Figure 5-2), which was also reflected in the social media data (see annex Figure A2.1). 'Active' pursuits (e.g. cycling or running) remained constant from April to December 2020, while 'slower' activities like wildlife watching or eating or drinking out/picnicking increased over time. Similar to the survey, activities that grew on social media in volume and importance during COVID were slower and more social activities like 'sitting', 'chatting', 'picnic' and 'playing'.

Activities varied among segments that over indexed on visits to urban green spaces. For Urbanites with low nature connection, cycling and running more active pursuits over indexed. Taken along with this segment under indexing in agreement that nature/wildlife is **more** important to their well-being over the course of the pandemic, Urbanites with low nature connection are active outdoors but this is unrelated to a connection to nature. Nature loving urbanites reflect the converse, where their second most common activity in green spaces was wildlife watching, reflective of slower activities. Nature loving urbanites also over index in believing nature has become more important to them over the pandemic, perhaps linking to the increase in slower activities over time as nature becomes more important to this segment.

Figure 5-2 Walking was the most common activity in urban green spaces

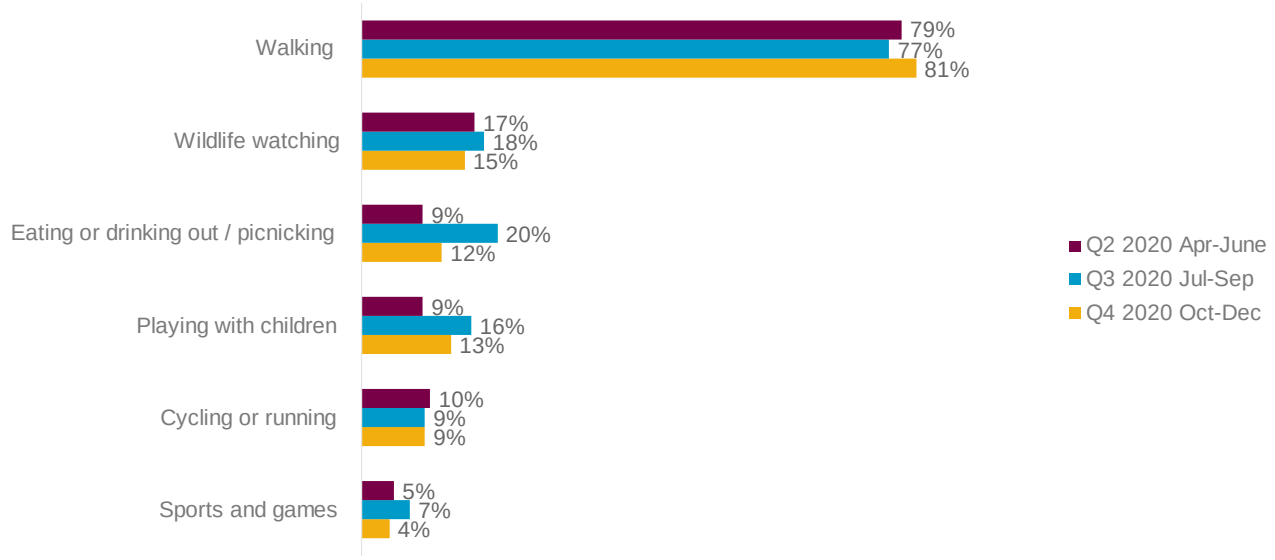


Figure notes

Source:

Q18 (M2A_Q8A) Which of these activities, if any, did you do on this specific visit? Filtered on visits to urban green spaces

(1) Data collected between April 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 1,362 (Q2 April-June 2020), 1,549 (Q3 July-September 2020), 1,453 (Q4 October-December 2020) respondents

Across the population there were some significant differences in activities at these urban green spaces.

- White respondents were more likely to go walking (82%) compared to all other ethnic groups; Black or Black British respondents were the least likely to go walking (58%).Black or Black British respondents were significantly more likely to play sports and games (19%) compared to all other ethnicities, and Asian or Asian British respondents were most likely to play with children (22%).
- 55 to 64 year olds were most likely to go walking in urban green spaces (90%) compared to all other ages, while 16 to 24 year olds were most likely to eat or drink out or picnic (25%) of the age groups.
- Though respondents with no long-term illness were more likely to have undertaken the majority of activities, the proportion of people using allotments or community gardens was similar whether respondents had a long term illness or not (7%).
- Respondents with lower scores in the ONS well-being questions for satisfaction, feeling that life was worthwhile and happiness were significantly more likely to eat or drink/have a picnic or go walking than respondents with high or medium well-being scores. Though those with high well-being scores were more likely to play with children when they visited urban green spaces.

5.3 Rural green spaces

Similar to urban spaces, the rural environment grew in importance in social media discussions during the first lockdown. The discussion about the activities in these spaces were overwhelmingly about them being used for playing and exercise, such as biking and climbing, as playing and

activities with friends became more important during lockdown (see annex Figure A2.2). Although the term “visiting” and activities such as photography remained important in social media discussions there was more of a focus on staying healthy during the pandemic. Backpacking has decreased in social media conversation volume during the pandemic, but it was an activity often featured in conversations about rural green spaces and could grow again in the future as lockdowns and restrictions on movement are lifted.

Figure 5-3 Social media posts related to rural green spaces peaked during first national lockdown

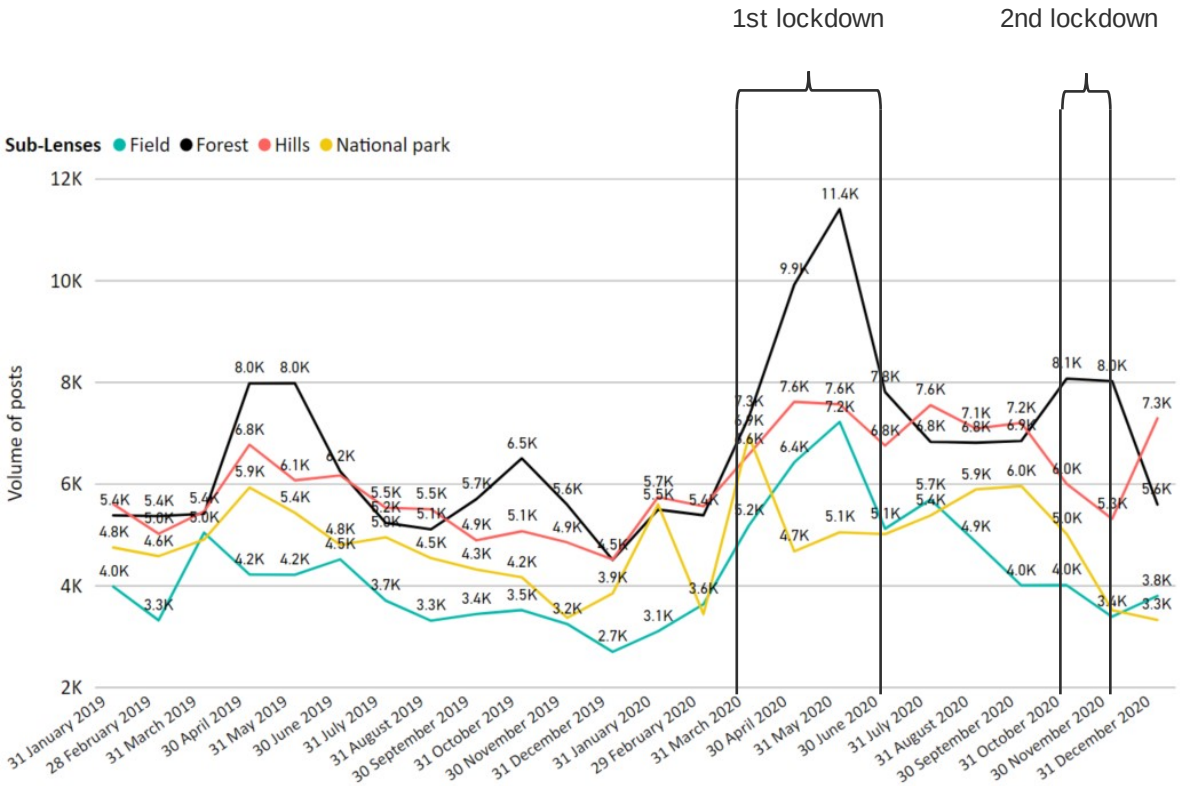


Figure notes

Source:

(1) All social posts related to L3: Field or L3: Forest or L3: Hills or L3: National Parks

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

5.4 Rural blue spaces

Blue spaces dominated search engine interest in the post-first-lockdown period (typically Q3 2020) (Figure 5-4). Searches for beaches and lakes were particularly popular, with travel restrictions and consecutive heatwaves likely contributing to a spike in interest with blue spaces.

Figure 5-4 Search engine data for rural spaces showed blue spaces were most commonly searched for rural sites (and were higher in 2020 than 2019 even when taking into account seasonality)

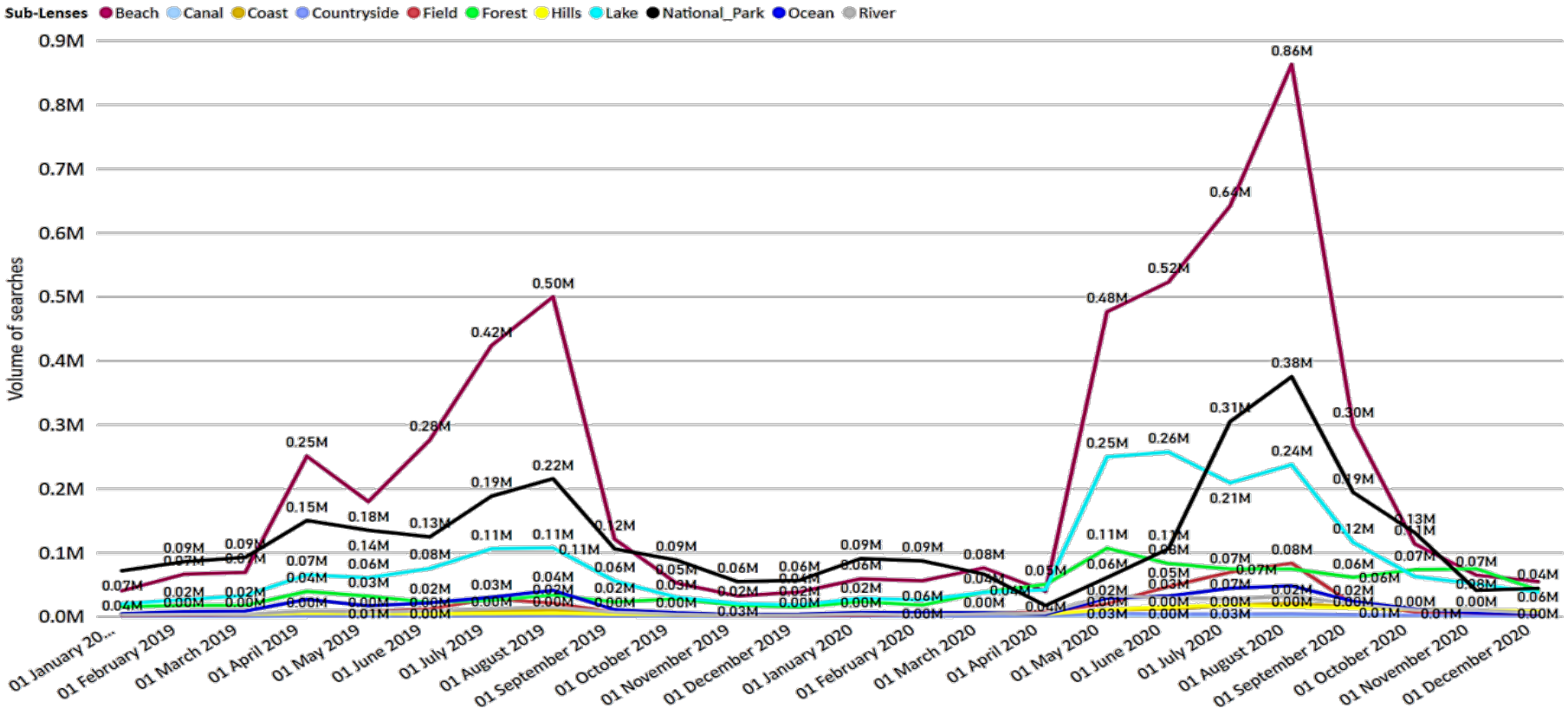


Figure notes

Source:

(1) All social posts related to L3: Beach or L3: Canal or L3: Coast or L3: Countryside or L3: Field or L3: Forest or L3: Hills or L3: Lake or L3: National_Park or L3: Ocean or L3: River

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

This was also reflected in the survey data, where visits to blue spaces peaked in the summer, with visits to beach/other coastline/sea particularly low at the start of lockdown (Figure 5-5).

Figure 5-5 Visits to rural blue spaces were highest in summer

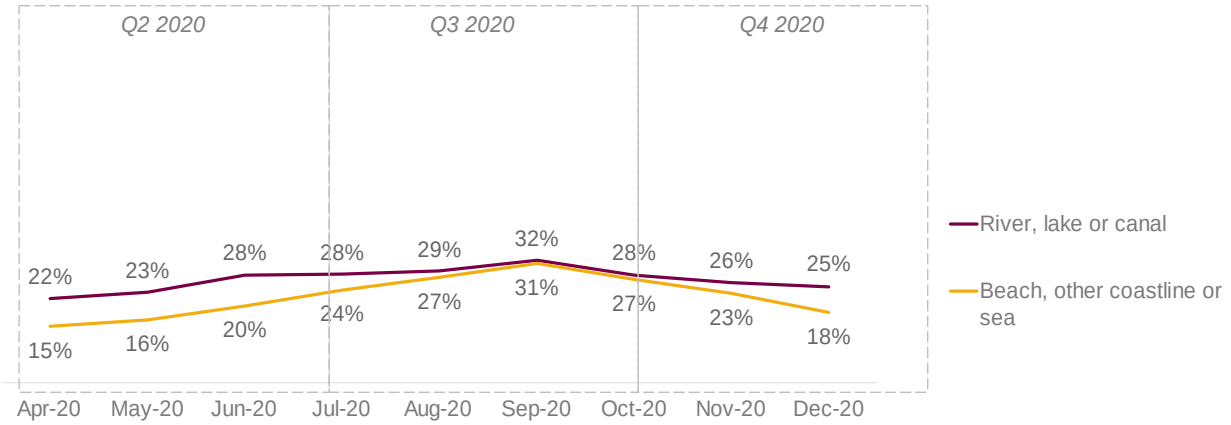


Figure notes

Source:

Q2 (M1_Q2) Which of the following type(s) of green and natural spaces have you visited during the last month?

(1) Data collected between April 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 2,017 (April 2020), 2,015 (May 2020), 2,001 (June 2020), 2,024 (July 2020), 2,009 (August 2020), 2,021 (September 2020) 2,021 (October 2020), 2,022 (November 2020), 1,994 (December 2020) respondents

Looking at these blue space visits by demographic, there are some important statistically significant differences.

- Respondents who were 16-24 or 25-39 were significantly more likely than all other age groups to visit a blue space (16 to 24: beach/other coastline/sea 26%; 25 to 39: River, lake or canal 33%).
- The higher the household income the more likely respondents were to have visited a blue space (£50,000 or more: River, lake or canal: 33%, beach/other coastline/sea: 26%). Adults from households with an annual income of £50,000 or more were more likely to have visited a blue space than adults from households with income below £50,000.
- Respondents with no illness visited blue spaces more (beach/other coastline/sea: 24%, River, lake or canal: 29%) than respondents with a long-term illness (beach/other coastline/sea: 20%, River, lake or canal: 24%).
- Respondents with children in the household were more likely to visit blue spaces (beach/other coastline/sea: 28%, River, lake or canal: 32%).
- White respondents were more likely to have visited the beach/other coastline/sea than all other ethnicities (24%). Black or Black British respondents were less likely to have visited rivers, lakes or canals compared to all other ethnicities (20%).
- Those with high well-being scores were more likely to have visited a blue space than medium or low scores for happiness, satisfaction and feeling that life is worthwhile.
- Within the segmentation, Nature Loving Urbanites were least likely to have visited a blue space, particularly under indexing in visits to coastal blue spaces (beach/other

coastline/sea), likely due to their largely urban residence. Content but less engaged with nature over indexed on visiting coastal blue spaces, a group who over indexes in living rurally.

Blue spaces dominated search interest in rural spaces in the post-lockdown period compared to rural green spaces, and searches for beaches and lakes became particularly popular as summer began and restrictions eased. While this is not unexpected due to the seasonal nature of blue spaces, the volume of discussion in summer 2020 was far higher than in 2019 (Figure 5-4).

Before the pandemic, discussions about blue spaces were mostly linked to physical activities, alongside being more closely linked to meditation and spirituality than other rural environments (see annex Figure A2.2 and Figure A2.3). Similar to green spaces, the volume of discussions about using blue spaces for exercise became more prominent over the course of the pandemic. Conversely, while meditation is still important, discussion moved away from activities being done outdoors to discussion of activities being done online as blue spaces may have become more difficult to access for many, leading people to seek mental health benefits from blue spaces through online soundscapes.

For coastal spaces (annex Figure A2.3), conversations increased around swimming and biking, matching the overall growth in physical exercise in these spaces, while meditating remained at a similar level. For inland blue spaces (annex Figure A2.4), swimming also gained importance during the pandemic, with the addition of boating, which is more closely linked to inland than coastal blue spaces. Meditation was also prominent at inland blue spaces, though decreased in comparison to activities with a physical focus, and less than in coastal spaces

6. Reasons for visiting green and natural spaces

6.1 Summary

Slower, social and more reflective activities became more important during lockdown in gardens (with increase in volume of terms like “relative’s” and importance of terms like “pottering”) and in parks (with an increase in volume of terms like “sitting” and importance of terms like “chatting” and “picnic”). This was reflected in the increased link in social media discussions between being outdoors and mental health and well-being. Before COVID, people were already making use of the outdoors to connect with nature for health and well-being reasons as well as connecting in a spiritual way with nature. Conversations around healing, zen and therapy all grew in volume and importance during lockdown, along with meditation, which increased particularly in relation to blue spaces.

Gardens

The main reasons in the survey for spending time in the garden were to get fresh air, do gardening and maintenance and for mental health and well-being. The connection between gardens and mental health and well-being increased during the pandemic and this was particularly so for people from lower income households.

Passive activities, like pottering, increased in volume in social media analysis and became more closely linked to mental health conversations during the pandemic. Connection with nature also increased in volume on social media through more discussion about uptake of activities like birdwatching and photography of wildlife in their garden.

Parks/Green spaces

The survey found that the main reasons for spending time in parks/green spaces were to get fresh air, for physical health and exercise and mental health and well-being. Adults from higher income households were more likely to visit for physical health and exercise, while those from lower income households for mental health and well-being.

Over the course of lockdown restrictions in 2020, the connection between exercise and mental health increased and slower, social activities became more prominent in online conversations. A high volume of people talked about deriving mental health benefits from spending time with others in green spaces.

Blue spaces

During the first national lockdown, the survey showed mental health became a more important reason to visit blue spaces. Social media discussions of some activities indicated that people were performing these tasks more regularly online rather than in blue spaces (such as meditating). As blue spaces have become more difficult to access for some, people have also been seeking mental health benefits typically derived from blue spaces through online soundscapes (such as recordings of ocean noise).

6.2 Reasons for spending time in gardens

In the survey, to get fresh air was the most popular reason for spending time in the garden but decreased slightly going into winter (71% in May 2020 then 62% in December 2020). Passive activities such as using gardens to connect to nature and watch wildlife or to take a break increased steadily, reflected in the ‘pottering’ based activities identified in the social media analysis. About a third of respondents spent time in the garden for mental health and well-being

and one in five for physical health and exercise (Figure 6-1).

Figure 6-1 Reasons for spending time in gardens by month. To get fresh air was the most common reason for spending time in the garden.

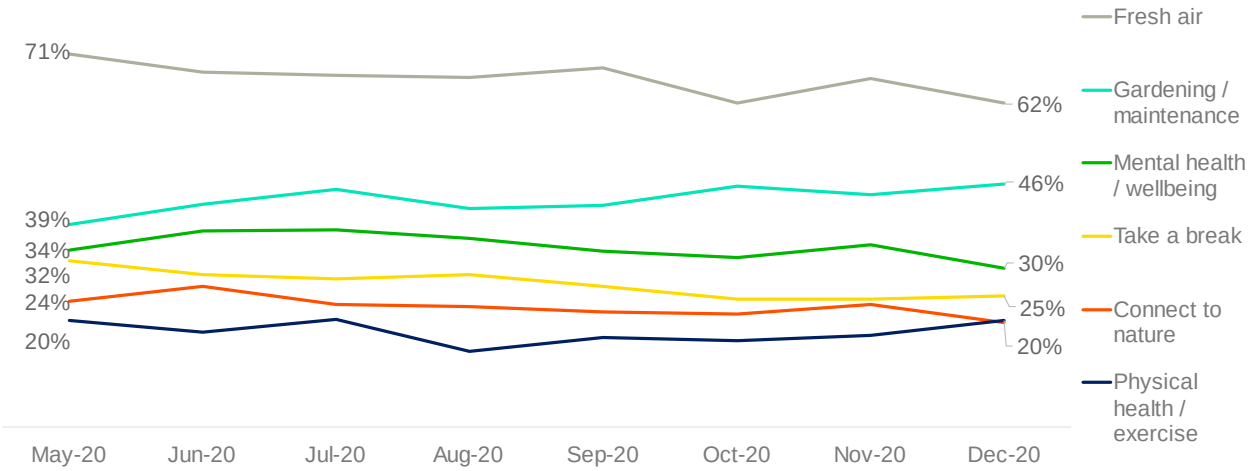


Figure notes

Source:

Q59c (M5_Q1E) What were the main three reasons for spending time in garden or space?

(1) Data collected between May 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 764 (May 2020), 754 (June 2020), 776 (July 2020), 776 (August 2020), 783 (September 2020) 761 (October 2020), 788 (November 2020), 768 (December 2020) respondents

The survey found differences among groups in relation to reasons for spending time in the garden:

- Those with a long term illness were more likely to report mental health and well-being as their reason (40%) for spending time in the garden than those without a long term illness (31%).
- Mental health and well-being was also significantly more likely to be reported as a reason for spending time in the garden by those with an annual household income below £15,000 (38%) than any other income group.
- Of the segments, Nature enthusiasts (who were more likely to be 65+, retired, have a strong nature connection, and have high satisfaction, happiness and worthwhile well-being scores) were most likely to spend time in gardens to connect with nature/ watch wildlife (35%), for their mental health and well-being(47%), and to do gardening /maintenance (63%). Infrequent outdoor visitors with medium nature connection (who were also likely to be 65+, retired, less likely to feel part of nature and had lower well-being scores for satisfaction, happiness and worthwhile) were least likely to spend time for physical health and exercise (13%).
- While women were more likely to report mental health and well-being as a reason for spending time in the garden (38%) than men (31%), men were more likely to report physical health and exercise (20%) than women (16%) as a reason for spending time in the garden.

- Respondents with higher well-being scores were significantly more likely to be spending time in their garden for physical health and exercise.

Before COVID, the main things people talked about on social media about time in gardens revolved around caring activities such as gardening, landscaping, and horticulture. Since the pandemic, people discussed using their gardens to look after their physical health as exercise became more prominent in social media discussions (annex Figure A2.5).

Although smaller in volume, passive activities phrased on social media discussions in specific ways like 'pottering' were commonly related to discussions around mental health. Discussion around wildlife photography grew in volume as people who would have previously gone elsewhere shifted to talking about taking wildlife photos in their gardens. This extends to people connecting with nature and watching wildlife in their gardens. This is discussed further in section 6 when looking at online nature communities.

As discussion around gardens increased in volume during the pandemic (see annex Figure A2.1), people discussed using them for exercise and workouts, activities that would have likely previously taken place elsewhere. The social media analysis indicated that Captain Tom[24] (whose fundraising efforts occurred in April 2020) inspired many to take part in challenges to stay active in their own gardens, contributing to the trend towards exercise in gardens.

Before the pandemic, people would practice wildlife photography elsewhere. However, as access to green and blue spaces became limited due to lockdown restrictions, conversation on social media indicated that people likely carried on practising it in places they could easily access, such as their gardens (see annex Figure A2.5).

This focus on exercise meant more garden-specific activities such as landscaping and horticulture became less prominent in online discussions.

People already associated gardens with both physical and mental health before the pandemic. However, the effect of the COVID-19 pandemic has likely strengthened that connection, as people discussed finding quiet, happiness and positivity in gardening or pottering around their garden to cope with lockdown restrictions.

6.3 Reasons for spending time in green spaces

Green spaces were the most commonly visited outdoor spaces in the survey. This section looks at the main reasons for visiting a green space for those who had visited one in the previous 14 days. This was defined as any visit to an urban green space (such as a park, field or playground), grounds of a historic property or country park, allotment or community garden, woodland or forest, hill, mountain or moorland, nature / wildlife reserve or fields / farmland / countryside

To get fresh air and for physical health and exercise were the most cited reasons for visiting a green space (Figure 6-2). These reasons were consistently reported by at least three in five respondents from April – December 2020. On average, around four in ten visited a green space for mental health and well-being (46% Q2, 38% Q3, 43% Q4) and one in five to connect to nature/watch wildlife (20% Q2, 24% Q3, 21% Q4).

[24] https://captaintom.org/story

Figure 6-2 Reasons for spending time in green spaces. Fresh air and physical health and exercise were most common reasons for spending time in green spaces.

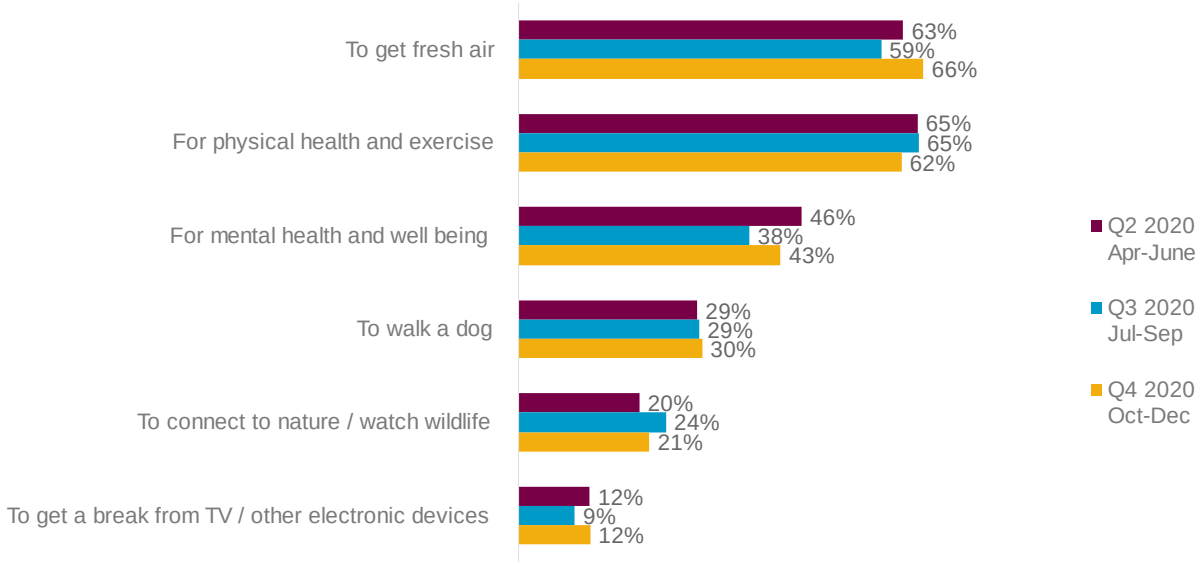


Figure notes

Source:

Q21 (M2A_SUB_Q5) What were the main three reasons for taking this visit? Filtered on adults that recently visited a green space

(1) Data collected between April 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 972 (Q2 April-June 2020), 1,186 (Q3 July-September 2020), 1,102 (Q4 October-December 2020) respondents

In the survey, there were some differences in reasons for spending time in green spaces across the population.

- There was a difference in reasons for visiting green spaces by age. People aged 65+ were more likely than others to visit green spaces and more likely to have gone walking (section 4).
- Eight in ten aged 65+ who had been to a green space went for physical health or exercise compared with just under half (46%) of 16 to 24 year olds.
- Those with higher well-being scores for happiness, satisfaction and worthwhile were more likely to visit greenspaces for physical health and exercise, or to connect with nature/watch wildlife. Those with lower well-being scores for these measures or with high anxiety were more likely to visit for mental health and well-being.
- Adults from households with an annual income below £15,000 were more likely to visit for their mental health and well-being than adults from households with higher annual income (51% compared with 39%). Those with an annual household income of £50,000 or more were more likely than others to visit for physical health and exercise.
- White respondents were more likely to visit green spaces for physical health and exercise (67% versus ethnic minority groups 49%). Adults from ethnic minority groups were more likely to visit to connect to nature/watch wildlife (28%) than White adults (21%).
- Nature enthusiasts were most likely to visit to connect with nature/watch wildlife (31%), while Urbanites with low nature connection were least likely (15%). With the Content but less engaged with nature segment similarly unlikely to visit to connect with nature (16%). However, there is an exception for the Infrequent outdoor visitors with medium nature connection segment, who were second most likely to visit for this reason (29%) out of the segments. This segment has age and likelihood to have a long-term illness in common with

Nature enthusiasts, perhaps indicating that visiting to connect with nature is associated with these characteristics.

Online discussions about the link between fresh air, peace and quiet and mental health benefits in green spaces were particularly prominent. People were not only talking about parks, but analysis of search engine data shows people were also actively searching for them after the first lockdown, signalling pent-up demand to spend time outdoors.

Analysis of pre-COVID social media data shows that connection between parks and exercise existed in online content prior to the pandemic. However, since the pandemic started, social media analysis indicates that parks have cemented their status as the backdrop for most outdoor exercise, and people view the benefits as good for their overall health (physical and mental) (see annex Figure A2.6). Sharing inspiration for walking and running routes also became more common, as people aimed to stay active and explore spaces close to where they live.

Mental health and associated benefits (examples of terms which were analysed in the taxonomy around mental health benefit were terms like 'sanity' and 'relax') did not feature prominently in the social media conversation about outdoor exercise before the pandemic. These became especially relevant as the pandemic brought into focus the need to look after mental health, and how natural spaces could play a positive role in this (see annex Figure A2.6).

Social media analysis over both the pre-COVID period and the COVID period showed that people discussed seeking out health and positive experiences when going for walks, but after the first national lockdown there was more of a focus on taking note and enjoying surroundings while doing so (see annex Figure A2.7). Some of the terms which were analysed in related to walks that grew in importance were 'inspiration', 'colours' and 'sunset'.

There were a couple of 'benefits' of spending time in green spaces that became less prominent in online discussion during the pandemic. Concerns around coronavirus and Government restrictions have meant that activities or terms related to 'fun' in the outdoors have taken a backseat as people sought to gain more specific mental and physical health benefits from their time spent outside (see annex Figure A2.6 and Figure A2.7). This was the case when looking across all green spaces, as well as in specific places such as inland blue spaces, parks, and gardens. All of these spaces saw a decrease in 'fun' alongside increases in more mental and physical benefit focused words, for example 'quiet', 'mental health', 'sanity'. Similarly, across specific activities, the same trend appeared. When looking at conversations about walking and exercise, fun decreased while the same group of words surrounding physical and mental health increased. In general, the pandemic appears to have made engagement with the environment slightly more functional over exciting, perhaps due to a change in mentality when restrictions meant these visits were confined to once a day and for practical named purposes.

However, analysis of social media discussions suggests that people were actually taking more notice and appreciating nature more also during these functional visits.

During the pandemic, social distancing and access challenges affected conversations about engagement with the outdoors. This was apparent in conversations about helping people cope with the effects of dementia. Before the pandemic, spending time outdoors was discussed on social media as a way of coping with the effects of dementia, and some associations offered walks and activities designed to help people use nature to cope with its effects. However, volumes of discussion on this topic was considerably lower in 2020 than it was in 2019 (peaking in both years in May for Dementia Action Week and September for World Alzheimer's Day) (Figure 6-3).

Figure 6-3 Social media analysis: Frequency of posts related to dementia show a decrease during the COVID pandemic.

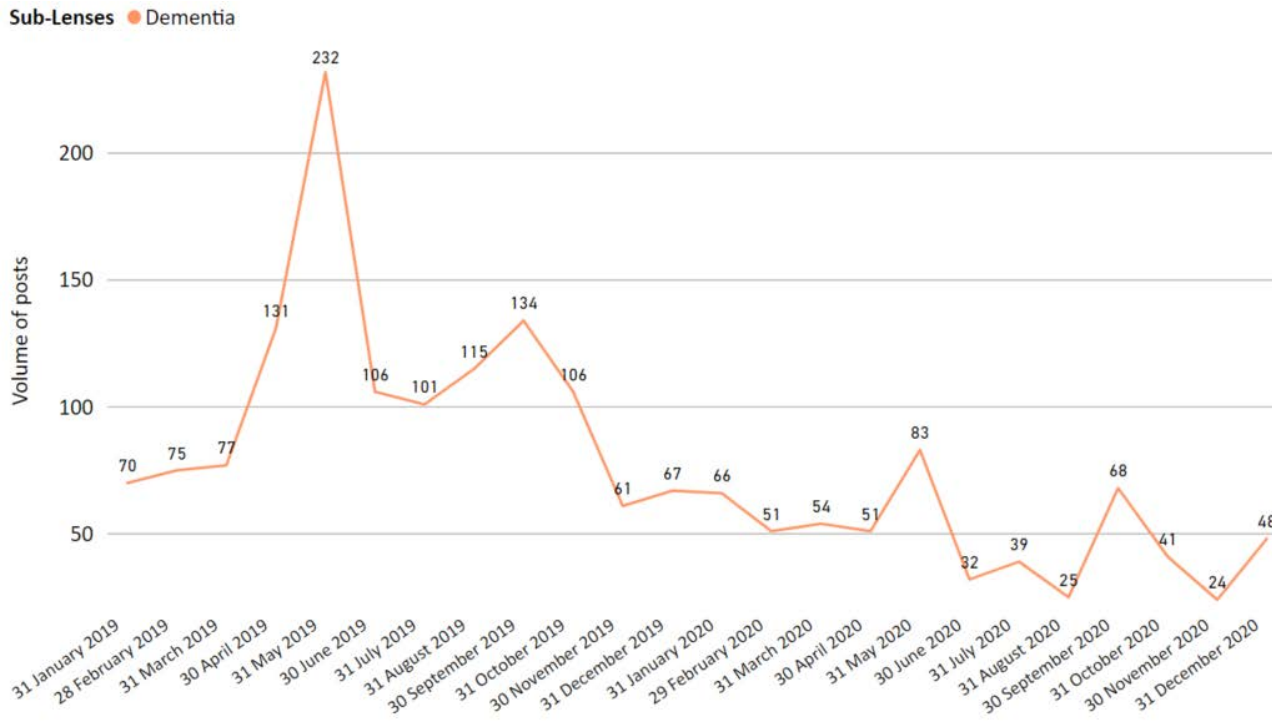


Figure notes

Source:

(1) All social posts related to L3: Dementia

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Conversations on social media about rural green spaces reflected a connection in people's minds between green spaces and physical health such as boosting their immune system (see annex Figure A2.8). Terms such as 'forest bathing' (forest bathing and forest therapy broadly means taking in, in all of one's senses, the forest atmosphere)[25]. became more common when discussing rural spaces during the pandemic as people sought out alternative activities with links to well-being to stay healthy during a global health emergency.

This connection was not seen in the social media data when people talk about urban spaces such as parks and gardens.

Conversations on social media about rural green spaces often revolved around events and special occasions, and conversations about green spaces are no different - reflected by high volumes of conversations highlighting flowers blooming in spring or leaves turning in the autumn.

6.4 Reasons for spending time in blue spaces

The list of main reasons for adults spending time in blue spaces was similar to the main reasons for spending time in green spaces. Please note that due to small base sizes in the survey, for the analysis in this section we have not separated out responses for inland blue spaces (rivers, lakes and canals) and coastal blue spaces (beach/other coastline/sea). Fresh air and physical health and exercise were the most common reasons in spring (April to June) to visit coastal and inland blue

[25] https://globalwellnessinstitute.org/wellnessevidence/forest-bathing/

spaces (Figure 6-4). However, towards the end of the year, visiting for mental health and well-being increased to the same level as physical health and exercise (which decreased slightly). Visiting to connect to nature/watch wildlife decreased substantially from summer to winter (from 38% in Q2 to 19% in Q4).

Figure 6-4 Reasons for spending time in blue spaces. Fresh air and physical health/exercise were most common throughout the year but mental health reasons increased in Q4.

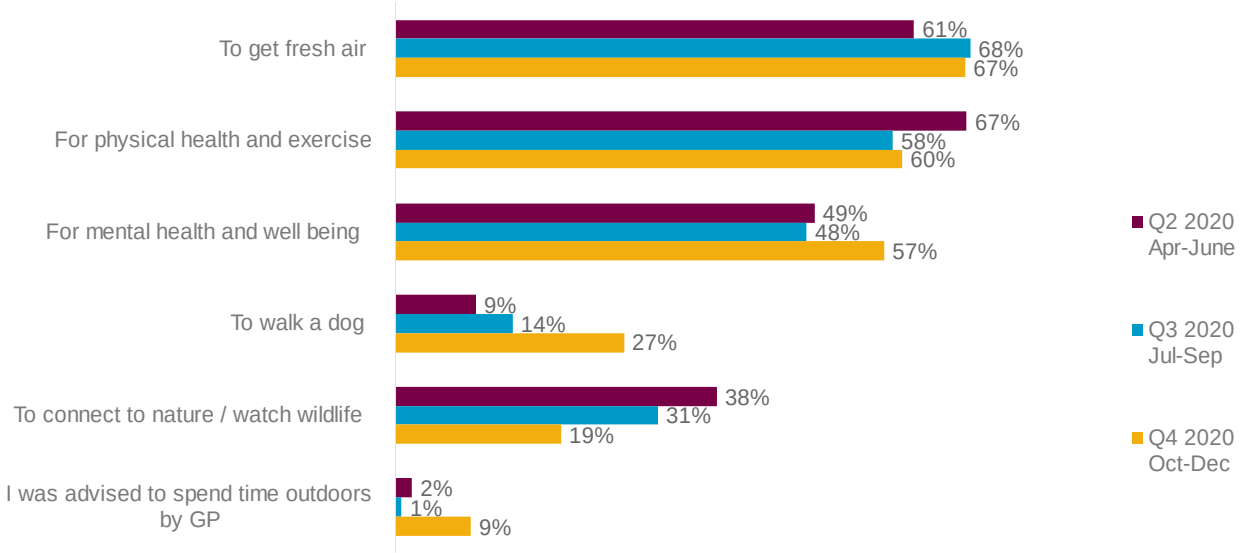


Figure notes

Source:

Q21 (M2A_SUB_Q5) What were the main three reasons for taking this visit? Filtered on adults that recently visited a blue space

(1) Data collected between April 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 368 (Q2 April-June 2020), 674 (Q3 July-September 2020), 580 (Q4 October-December 2020) respondents

In the survey, reasons for visiting blue spaces varied across the population:

- Those from households with an annual income below £50,000 were more likely to visit blue spaces for physical health and exercise (£15,000 to £49,999: 63%), or mental health and well-being (£0 to £14,999: 54%). Higher earning respondents were more likely to cite looking after family members (10%) or getting a break from work (6%) or get a break from TV or other electronic devices (16%) than other income groups.
- Adults from ethnic minority groups were more likely than all other ethnicities to cite mental health and well-being (63%) or physical health and exercise (56%) as reasons for visiting blue spaces.
- White respondents were more likely to visit blue spaces for fresh air (67%), to get a break from TV / other electronic devices (10%), or to connect to nature/watch wildlife (30%).
- Those with low well-being scores for happiness and life satisfaction were more likely of the groups to visit blue spaces for mental health and well-being.
- Respondents who were 65+ were most likely to visit blue spaces to connect to nature/ watch wildlife (44%), 16-24s were least likely to visit for this reason (11%) or for their physical health and exercise (16-24: 45%, versus 55-64: 73%).

- Content but less connected with nature, a segment that were more likely to be 65+ with no long term illness or disability, were more likely than other segments to cite visiting for physical health and exercise (73%).
- Infrequent outdoor visitors with medium nature connection, who were more likely to have a long term illness and lower well-being scores for satisfaction, happiness and worthwhile, were most likely to visit for mental health and well-being (69%). Nature enthisiasts were most likely of subgroups to cite visiting to connect to nature/watch wildlife (46%).

Analysis of search engine data shows that searches for rural blue spaces were far more common than rural green spaces in the post-lockdown period from May onwards, with beaches and lakes proving particularly popular (Figure 5-4). A loosening of domestic travel restrictions and tightening of international travel and consecutive heatwaves in England may have contributed to a spike in demand for blue spaces closer to home. While blue spaces (particularly coastal areas) were more closely linked to meditation and spirituality than other rural environments, the tone of conversation during the pandemic shifted to exercise and Online Communities (see Section 7).

Discussion around 'lighter' forms of looking after mental health (such as meditating) were more prominent in blue spaces. However, similar to green spaces, exercise has become more prominent. A higher volume of discussion in coastal blue spaces was linked to physical activities (such as walking, running, and swimming) and increasingly so since the pandemic. Biking and swimming both grew in volume of discussions on social media in coastal blue spaces during lockdown.

While meditation was still closely related to blue spaces in social media discussions, there was a shift in the volume of discussions of meditation linked to blue spaces which suggests that people were moving these activities online. As blue spaces have become more difficult to access for many, people have been discussing seeking mental health benefits from blue spaces through online soundscapes. People have been talking about soothing soundscapes from blue spaces to achieve relaxation and mental health benefits, with certain accounts on Twitter broadcasting these to their followers.

Swimming gained importance in the social media conversations during the pandemic in general, and particularly in combination with **inland blue spaces** during the summer. Meditation was also prominent in discussions about inland blue spaces, but less so than in coastal spaces.

7. Online communities

Interest in connecting with others, whether physically or virtually, grew in volume and importance on social media during the pandemic. The discussions online indicated an increase in the perceived importance of staying close to others for people's emotional well-being during the pandemic. Most respondents to the People and Nature Survey never, or rarely, post online content related to the environment. However, the proportion that never post content related to the environment did decrease slightly from 51% in Q2 2020 to 45% in Q4 2020. Similarly, the proportion that posted online content related to the environment often or always/whenever they have the opportunity increased from 9% to 14% over the same period (Figure 7-1).

Figure 7-1 The majority never, or rarely, post online content related to the environment.

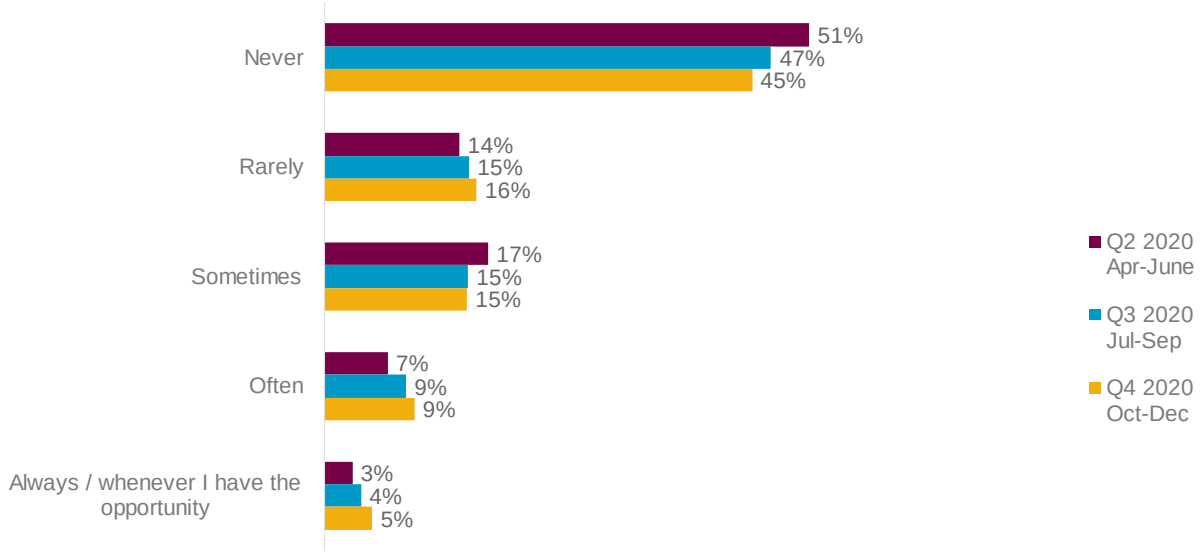


Figure notes

Source:

(M4_Q9) How often do you do the actions below when you have the opportunity? I post online content related to the environment

(1) Data collected between April 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 1,181 (Q2 April-June 2020), 1,232 (Q3 July-September 2020), 1,267 (Q4 October-December 2020) respondents

Younger adults were significantly more likely to post online content related to the environment. Close to one in ten (8%) 16 to 24 year olds posted always or whenever they have the opportunity compared to 2% of those aged 65 or older. Posting online content related to the environment was also more common in men, people with a long-term illness or disability (who may have less access to visiting green and natural spaces) and respondents with children in the household.

While it is only a minority that regularly post online content related to the environment, we did consistently see that the volumes and trends over time in the survey and social media analysis were closely related when it came to places, activities, benefits and barriers. While the population as a whole are not regularly posting online it does provide more confidence in the

representativeness of the social media data even though it comes from a smaller segment of the population.

Virtual communities (such as the #TwitterNatureCommunity) grew (Figure 7-2) and used shared interest in nature as a way for people to stay connected despite restrictions, and the outdoors became the backdrop for much socialising safely with friends and family once some restrictions on meeting outdoors started to be lifted. While #TwitterNatureCommunity was gaining momentum (in volume of discussion online) prior to lockdown, this was accelerated after.

Figure 7-2 Social media discussion of #TwitterNatureCommunity grew during the pandemic.

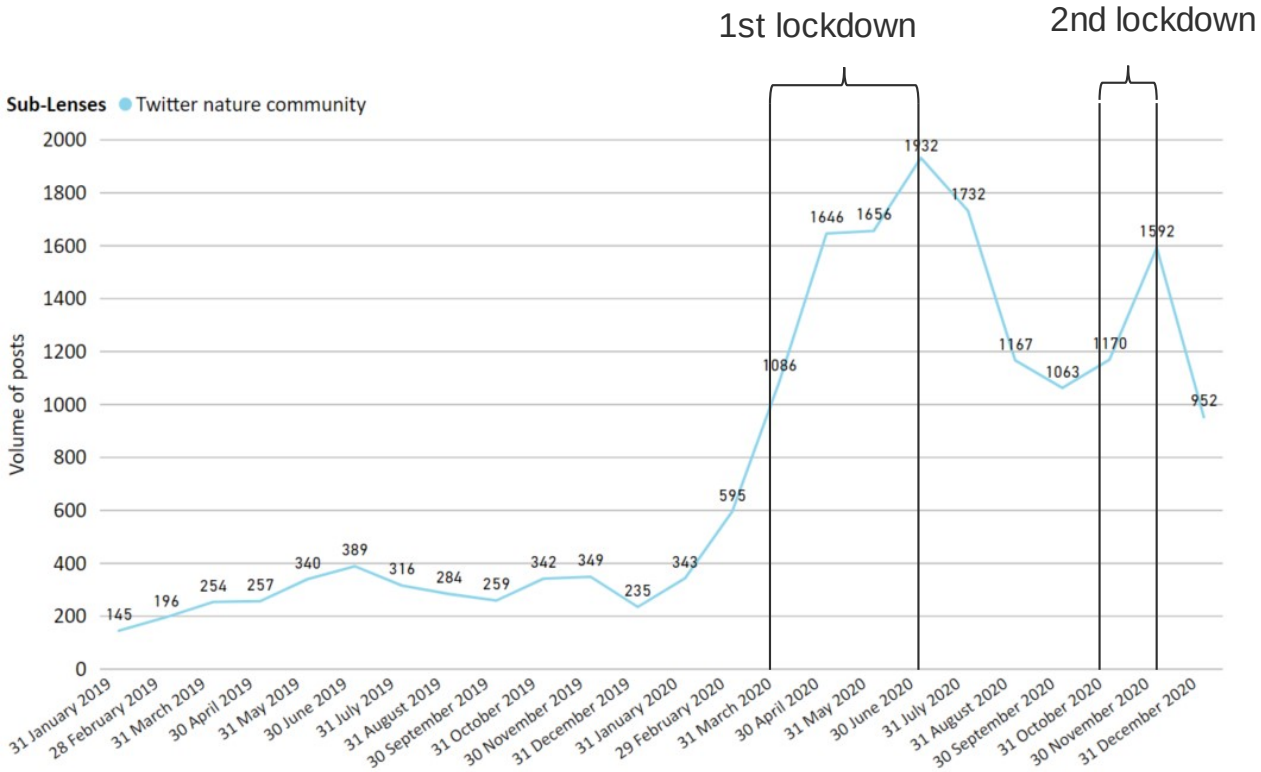


Figure notes

Source:

(1) All social posts related to L3: #TwitterNatureCommunity

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Most activity using the Twitter nature community/online posting platform was related to photography. The biggest change during the pandemic was the shift to posting more scenes from homes as access to previously commonly discussed sites like nature reserves and lakes became more difficult. Online communities on Twitter have helped people connect with other like-minded nature enthusiasts and those involved may derive similar positive benefits for their mental health, even while constrained to a more domestic dimension.

In social media discussions there was a reasonably similar volume of discussions about benefits such as 'love', 'positivity' and 'happy' people derive from online communities (in this case #twitternaturecommunity) as those that they get from spending time with friends and families (with the exception of mental health and well-being benefits which are not as common among the benefits of being part of online communities) (Table 7-1).

Table 7-1 Social media discussion of the benefits of #TwitterNatureCommunity was similar to the discussion of benefits of time with friends and family in nature. The table shows the most common (Top 10 Volume) terms related to #TwitterNatureCommunity and Friends and Family and then whether these have increased or decreased in volume between the pre-COVID and COVID period

#TwitterNatureCommunity		Friends and Family	
Top 10 Volume	**COVID increase/decrease**	**Top 10 Volume**	**COVID increase/decrease**
Love		Health	
Positivity	Increase	Love	
Happy		Mental health	
Flowers	Increase	Happy	
Colours		Fun	Decrease
Fun	Increase	Knowledge	
Calm	Increase	Positivity	Increase
Excited	Decrease	Quiet	Decrease
Inspiration	Increase	Relax	
Sunset	Decrease	Well-being	Increase

Figure notes

Source:

(1) All social posts related to L3: #twitternaturecommunity or L1: Benefits

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

The outdoors became an area for connections both in person and outdoors. It became more of a key space for people to connect with their friends and family, as people used their daily exercise to interact with them. More people made the most of the limitations on gatherings while minimising risks to move celebrations such as birthdays to parks and gardens. However, as with activities in green spaces in general there was a decrease in discussions of 'fun' as a reason/benefit of spending time with friends and family in nature.

8. Barriers to visiting green and natural spaces

8.1 Summary

The survey found that visits to green and natural spaces were lower at the start of lockdown (49% had visited a green and natural space in the previous 14 days in April) and then increased after that (see Section 4).

In April 2020, coronavirus/following government rules stopped half of survey respondents from spending time outdoors in the last 14 days. This reason became less of a barrier to spending time outdoors as lockdown eased in summer/autumn 2020. Similarly, discussion on social media of social distancing and crowding as a barrier also decreased following the initial peak.

Poor physical health or illness was a barrier for about one in ten survey respondents.

Discussion on social media shows people with disabilities have been frustrated during lockdown due to shielding and struggling to access the outdoors without access to facilities such as parking and toilets.

8.2 Barriers to spending more time outside

In the survey, the two most common barriers to spending more time in green and natural spaces between April and December 2020 were unsurprisingly related to coronavirus and bad weather (Figure 8-1). These were also the two most common responses given when respondents were asked what, if anything, generally stops you from spending more free time outside in green and natural spaces.

However, across the course of the survey, staying at home to stop coronavirus spreading/Government restrictions decreased as a barrier to further engagement with the outdoors (from 58% in April to 32% in December), with bad/poor weather featuring as the top reported barrier by the end of 2020 (from 24% in April to 49% in December).

Between April and December 2020, reasons reported by adults for not spending time outdoors were: being too busy at work (20%), poor physical health (or illness) (14%) and poor mental health or well-being (7%) (Figure 8-1).

Figure 8-1 Staying at home to stop coronavirus spreading/government restrictions decreased as a reason for not spending more time outside in green and natural spaces throughout the year

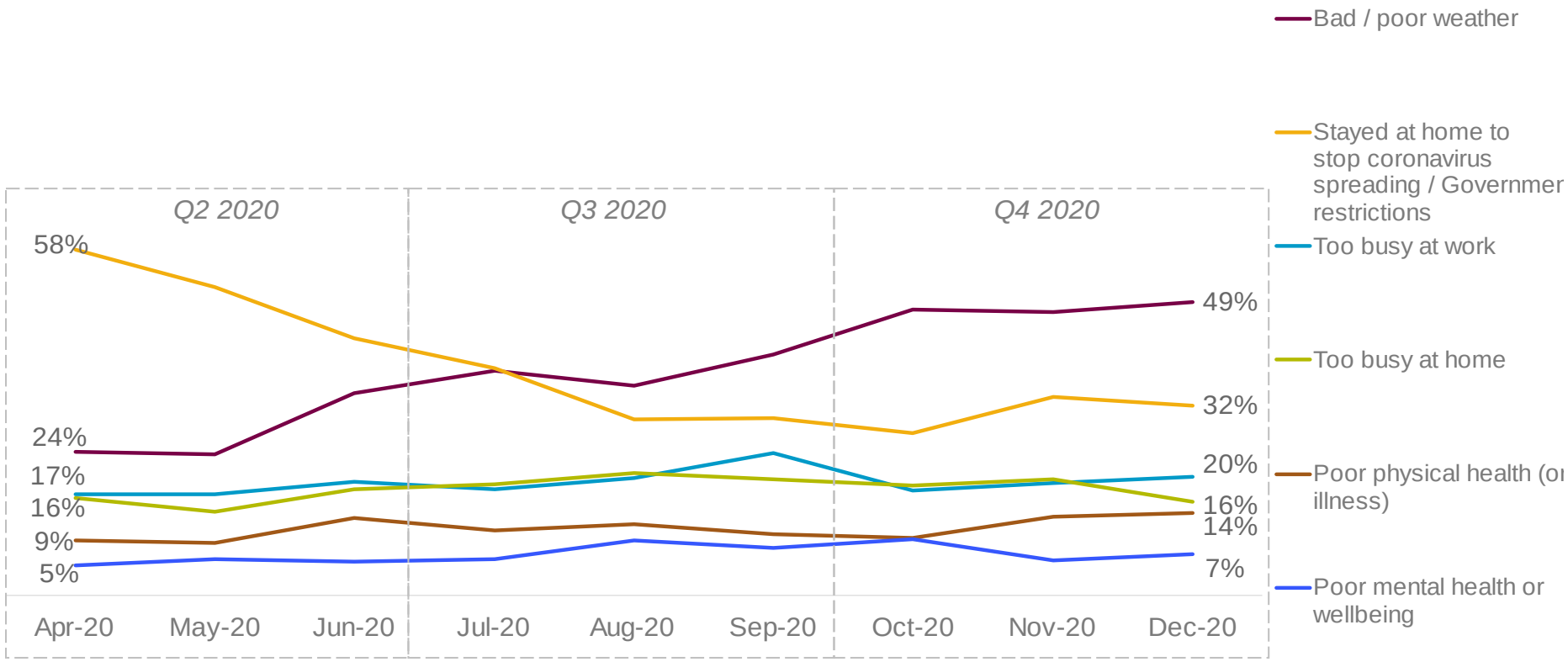


Figure notes

Source:

Q41 (M3_Q9) What, if anything, generally stops you from spending more free time outside in green and natural spaces?

(1) Data collected between April 1st and December 31st 2020 (inclusive)

The samples for this question were 1,067 (April 2020), 1,076 (May 2020), 1,043 (June 2020), 1,086 (July 2020), 1,034 (August 2020), 1,012 (September 2020) 1,046 (October 2020), 1,030 (November 2020), 1,028 (December 2020) respondents

When it came to barriers to spending time outdoors (for those with no visits in the previous 14 days), the survey found some differences among the population:

- Adults who were 65+ were more likely to stay at home to stop coronavirus spreading/Government restrictions than any other subgroup (50%) in 2020.
- Younger adults (16 to 24) were more likely than any other age group to say they were not interested in spending time outdoors (8%).
- Respondents with children in the household were more likely to cite being too busy at home (23%) or too busy at work (24%) than those with no children.
- Adults from households with annual income below £15,000 were more likely than those from households with an annual income of £50,000+ to cite greater levels of fear/worry about getting hurt or injured (4%, compared with 2%) or fear/worry about crime or anti-social behaviour (including physical and/or verbal abuse) (11% compared with 6%), and that nowhere near them is nice enough to spend free time in (10% compared with 7%).
- Those with low well-being scores for satisfaction, happiness and worthwhile were more likely to cite fear/worry about getting hurt or injured, fear/worry about crime or anti-social behaviour (including physical and/or verbal abuse), not being interested, and that nowhere near them was nice enough to spend free time in than other groups while those with higher well-being scores were more likely to cite being busy or the weather as a reason for not spending more free time outdoors.

In the segmentation, those least likely to visit had characteristics in common with the above survey analysis. The segments with fewest visits were those Infrequent outdoor visitors with medium nature connection, Urbanites with low nature connection, and those who were Content but less engaged with nature. The two segments who were more likely to be 55 or older, Infrequent outdoor visitors with medium nature connection and Content but less engaged, were most likely to cite staying at home to stop coronavirus spreading/Government restrictions out of the segments, and for the former, this was the most prevalent reason for not visiting. The two segments who over index on medium/low well-being scores, Urbanites with low connection, and Infrequent outdoor visitors with medium nature connection were likely to say that nowhere near them was nice enough to spend free time in, while the younger of these, Urbanites with low connection were most likely of the segments to cite not being interested, as with the overall survey analysis conclusions.

While mental health or well-being and physical health (or illness) were mentioned less frequently in the survey than other barriers, there were some variations in the population:

- Adults from households with an annual income below £15,000 were more likely to cite poor physical (or illness) (16%) or mental health or well-being (13%) as a barrier than adults from households with an annual income above £15,000.
- Those with an illness were more likely to report poor physical health (or illness) (25%) or mental health or well-being (14%) as a barrier to spending time in green spaces.
- Those with low well-being scores for satisfaction, happiness and worthwhileness were more likely to cite poor mental health or well-being or physical health (or illness), while those with higher well-being scores were more likely to cite being busy at home or at work or poor/bad weather as a reason for not spending more free time outdoors.
- 16 to 24 year olds and 25 to 39 year olds were more likely than any other subgroup to cite poor mental health or well-being as a reason for not spending more free time outdoors.
- Unemployed respondents (17%) and students (11%) were more likely than all other groups to cite mental health or well-being as a reason for not spending more free time outdoors.

8.3 Coronavirus specific barriers

Social media discussion echoed survey responses in relation to fears over coronavirus stopping people going outdoors. Crowding concerns (social distancing/ places being too busy) peaked at the start of the pandemic but eased off later in 2020 as people became more used to lockdown and national restrictions eased somewhat (Figure 8-2).

Figure 8-2 Social media posts related to social distancing and sites being too busy

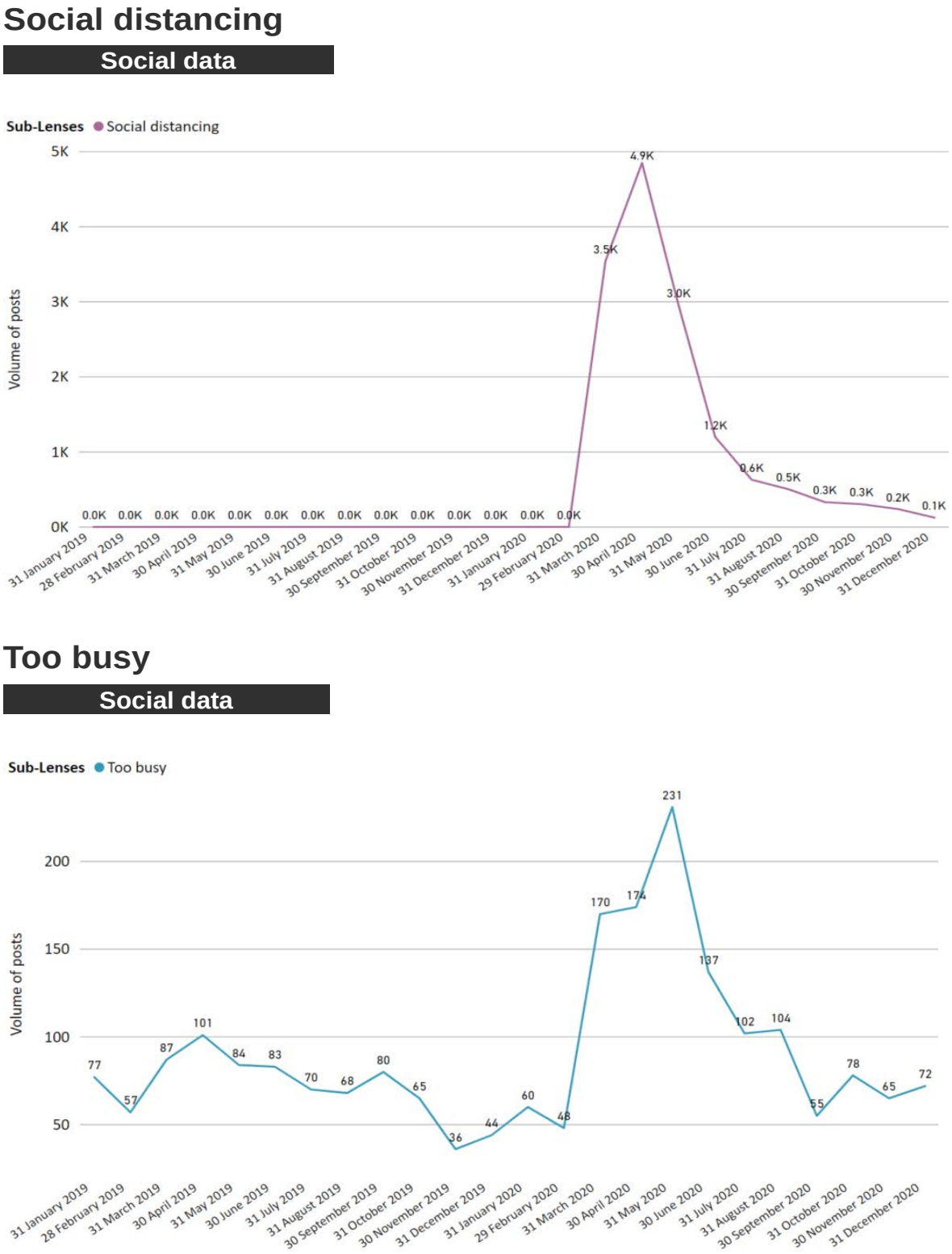


Figure notes

Source:

(1) All social posts related to L3: Social Distancing or L3: Too busy

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Discussion on social media mirrored general trends found in the survey in relation to reasons for not spending more time in green and natural spaces. Concern about over-crowding and distancing decreased as a reason for not spending time in green and natural spaces from four in ten (40%) in April to three in ten (29%) in December (Figure 8-3).

Figure 8-3 Concern about over-crowding and not being able to keep distance from people decreased from May (40%) to December (29%).

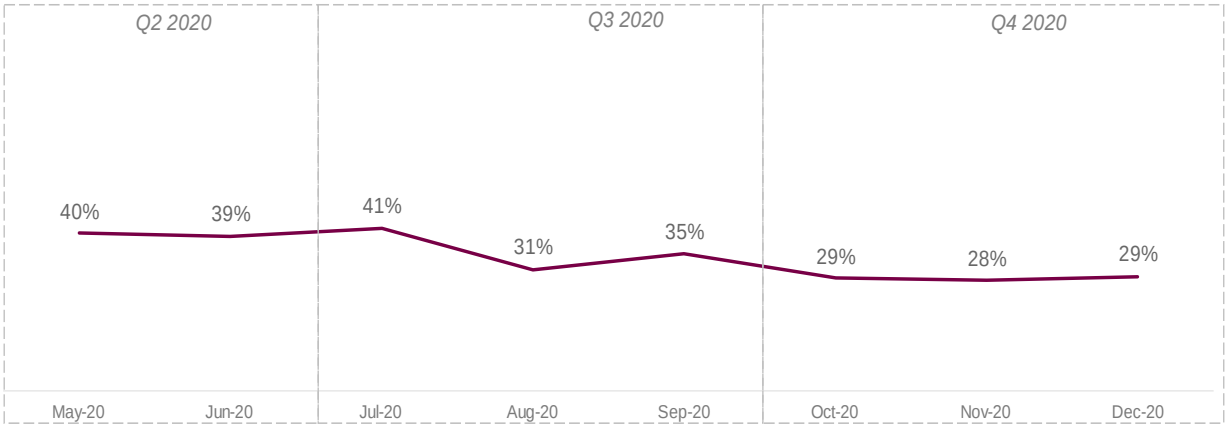


Figure notes

Source:

(M2B_Q4B) Thinking about the time since coronavirus restrictions were introduced, have any of the following reasons prevented you spending time outside? I am concerned about over-crowding and not being able to keep my distance from people.

(1) Data collected between May 1st and December 31st 2020 (inclusive)

(2) The samples for this question were 754 (May 2020), 647 (June 2020), 605 (July 2020), 569 (August 2020), 567 (September 2020) 676 (October 2020), 687 (November 2020), 729 (December 2020) respondents

Social media analysis also identified conversations around emotional barriers (such as shock, anger, and annoyance) to issues around spending time outdoors during lockdown (Table 8-1). Over time the volume decreased, compared to the pre-COVID period, as people got used to living under lockdown, conversations around negative emotions (shocked, angry, annoyed) were higher and health anxieties increased (social distancing /sick). Table 8-1 shows the ten highest topics in terms of volume and importance (social media index) related to 'Parks' and 'Barriers'.

As mentioned in the benefits section, when looking across all green spaces, as well as in specific places such as inland blue spaces, parks, gardens, there was a decrease in 'fun' as a descriptor in these conversations. The same trend occurred in conversations about walking and exercise, where fun decreased while the same group of words surrounding physical and mental health increased. This change in benefits of the outdoors towards more functional over exciting indicates a potential barrier to individuals visiting green spaces, as it may no longer invoke the same sense of joy that it had before restrictions on access during lockdown came into force.

Table 8-1 Social Media posts related to parks and barriers. The Top 10 volume columns indicate volume of posts on social media during the pandemic, Covid increase/decrease column indicates whether the volumes have increased or decreased since before the pandemic

Social data: Relationship between parks and barriers during the pandemic			
Top 10 Volume	**COVID increase/decrease**	**Top 10 Social Media Index**	**COVID increase/decrease**
Social distancing	Increase	Concerned	Increase
Closed	Increase	Annoyed	Increase
Ill	Increase	Shocked	Increase
Concerned	Decrease	Social distancing	Increase
Fear	Increase	Closed	Increase
Rain	Decrease	Dangerous	Increase
Dangerous	Increase	Sick	Increase
Shocked	Increase	Confusion	Increase
Angry	Increase	Frustrated	Increase
Annoyed	Increase	Litter	Decrease

Figure notes

Source:

(1) All social posts related to All social posts related to L3: Parks and L1: Barriers

(2) Data collected between March 1st and December 31st 2020 (inclusive)

8.4 Barriers for people with disabilities during the pandemic

There were some specific challenges and barriers for people with disabilities during lockdown. Additional challenges were posed for example in accessing public spaces and conversation volumes in social media rose around feelings of frustration, a need for accessible parking and sites being ‘too far’.

9. Summary

9.1 How people are experiencing the outdoors

The survey found that the proportion of adults visiting green and natural spaces remained consistent following the initial shock of lockdown. Typically, around six in ten had visited a green or natural space in the previous 14 days. However, visiting levels varied when looking at ethnicity, age, income and gender. Visiting was less common among adults that were Black or Black British, 65+, from lower income households, educated below degree level or had poor self-reported well-being (using ONS harmonised questions on satisfaction, happiness, worthwhile and anxiousness).

In the segmentation, Sociable nature lovers (84%), Nature enthusiasts (82%), and Nature loving urbanites (82%), were most likely to have visited a green and natural space. These segments indexed highly on their level of nature connection and placed an emphasis on well-being in these spaces. In comparison, those who were Infrequent outdoor visitors with medium nature connection were least likely to have visited (22%) followed by Urbanites with low nature connection (59%), both of whom indexed lower than average on well-being and nature metrics.

Parks were the most common place visited and were related to a wide variety of activities and benefits including physical and mental health benefits, connecting with nature and with other people. Visits to blue spaces peaked in the summer. Reasons for visiting blue spaces were varied with a high proportion going for exercise, but also with more calming, holistic reasons for going.

In the segmentation, with the exception of Sociable nature lovers, visits to parks seem to be related to whether the segment over indexes on living in urban or rural spaces. Where rural living is high, for example among Nature enthusiasts, visits to urban green spaces indexes low. When considering blue spaces, Nature loving urbanites were least likely to have visited of the segments.

The main reasons in the survey for spending time in the garden were to get fresh air, gardening/maintenance and mental health or well-being. The relationship between gardens and mental health increased during the pandemic with the proportion reporting this as a reason for spending time in their garden increasing throughout the survey period (April to December 2020). This was particularly so for people from lower income households.

In social media discussions, passive activities in the garden like pottering, became more associated with conversations about mental health over time. Indications of people connecting with nature also increased in volume on social media during the pandemic through a higher volume of discussion of activities like birdwatching and photography.

Lighter forms of activity such as walking have gained prominence as more people venture outdoors as a way to keep on top of their physical and mental health. While more active forms of exercise were also prominent, activities like walking, picnicking, socialising and playing were increasingly common in parks and other green spaces. Pottering, connecting with nature and photography all became more common in gardens.

The relationship between being outdoors (whether in the garden, at a park, at a beach) and mental health became more apparent. Groups of people least likely to access green and natural spaces were the ones that more typically reported going for mental health and well-being. Respondents between the ages of 25 and 55, those from lower income households, those who were unemployed, those with a long-term illness or disability and those with low well-being scores were more likely than average to visit green and natural spaces for mental-health reasons.

During the pandemic, people were less likely to discuss ‘fun’ as being a reason for going outdoors on social media than they were before the pandemic.

Interest in connecting with others, whether in outdoor settings or virtually, grew in volume and importance on social media during the pandemic. Online communities on Twitter have helped people connect with other like-minded nature enthusiasts and derive similar positive benefits such as 'love', 'positivity' and 'happy' that they discussed getting from connecting with friends and family, even while constrained to a more domestic dimension.

9.2 Barriers to engagement with green and natural spaces

Coronavirus (staying at home to stop coronavirus spreading/Government restrictions) and poor/bad weather were the main reasons captured by the survey for not spending time outdoors (particularly for those aged 65+). In both the survey and social media discussion, social distancing and overcrowding decreased as barriers/concerns as people got used to lockdown and restrictions in England eased.

One in ten adults from lower income households responded that fear of crime (11%), and that nowhere near them is nice enough to spend free time in (10%) were reasons for them not visiting green and natural spaces more.

The survey analysis and segmentation found that certain barriers were much more prevalent among differing demographics. For example, older adults and those with long term health conditions were more likely to stay at home to stop coronavirus spreading. This was matched by the segments Infrequent outdoor visitors with medium nature connection and Content but less engaged. While younger segments were more likely to say they weren't interested. Social media analysis suggests barriers related to access to outdoor places were challenging for people with disabilities, with discussions commonly referencing reduced public transport and limited parking (especially nearby outdoors attractions) making visits more difficult.

9.3 Using mixed methods to report on engagement with nature during COVID

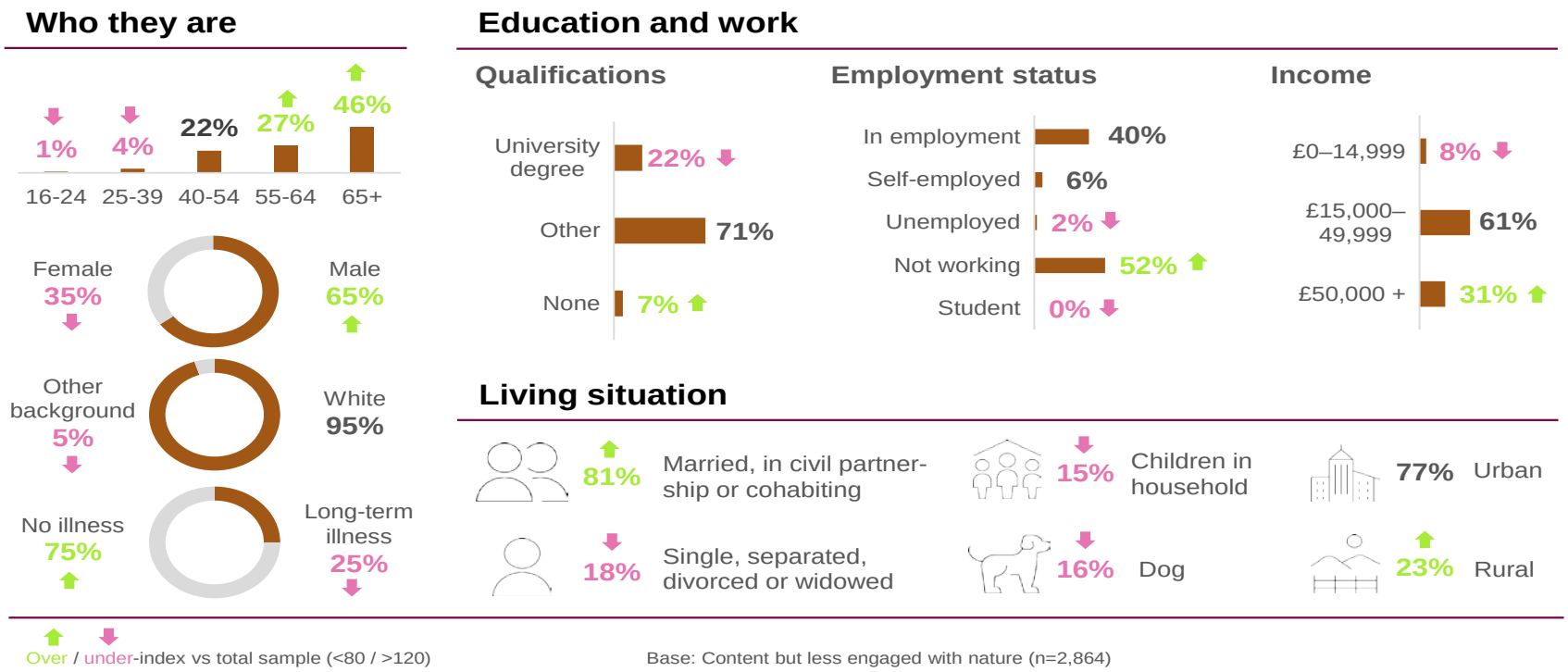
There was a real benefit of using the People and Nature Survey questionnaire content as the base for the social media taxonomy. Having a taxonomy related to the survey allowed a more straightforward comparison of what people were talking about with how they are answered the survey. However, the benefits of using a wider data period in the social media provided the ability to track what happened before COVID, what changed during lockdown and whether these changes were sustained.

The social media analysis also provided more information about how people really talk about nature and relate to it. Social media analysis brought to light the decrease in discussions around green spaces supporting those with dementia, emotions around the importance of connection and generally a greater understanding of the relationship between where people go, what they do, why they do it and what they get out of it. The survey provided the ability to frame these in terms of how all the activities and benefits changed among different groups of the population.

There are several sections of this report that show that the social media analysis results and survey results were relatively similar. This was unexpected given that the majority of social media discussion was taken from Twitter and the user profile of Twitter is not as representative of the population (it is a younger, more affluent urban audience with more than 60% of users under 35) and a relatively small proportion of the People and Nature survey respondents reported that they often post online about the environment. This indicates that digital data sources such as social media data have the potential to supplement existing information on nature engagement gathered through traditional survey methods. Furthermore, in the absence of available survey data, social media data can act as a proxy for measurements of nature engagement.

10. Annex 1: Segmentation Analysis[26]

Segment name: Content but less engaged with nature
Segment size: 22%

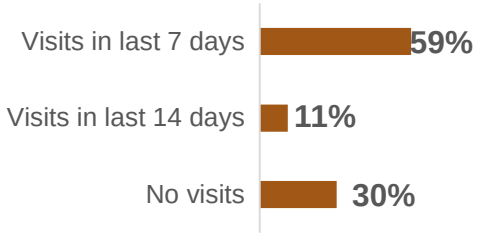


[26] Visit recenty in the Pen portraits realates to the date of the most recent visit and whether this was in the last 7 or 14 days. This differs from No_Of_Visits in the attached data tables, which reports overall proportions of adults who had made a visit in the last 14 days.

Segment name: Content but less engaged with nature
Segment size: 22%

Engagement with green and natural spaces

Visit recency – last 14 days



Top 5 activities (most recent visit)	**85%** Walking	**18%** ↓ Wildlife watching	**9%** ↓ Eating / drinking	**6%** ↓ Cycling / running	**5%** ↓ Playing with children
Top 5 types of places (most recent visit)	**32%** Urban green space	**22%** Fields / farmland / countryside	**12%** Woodland or forest	**11%** River, lake or canal	**10%** ↑ Beach / other coastline / sea

Nature connection

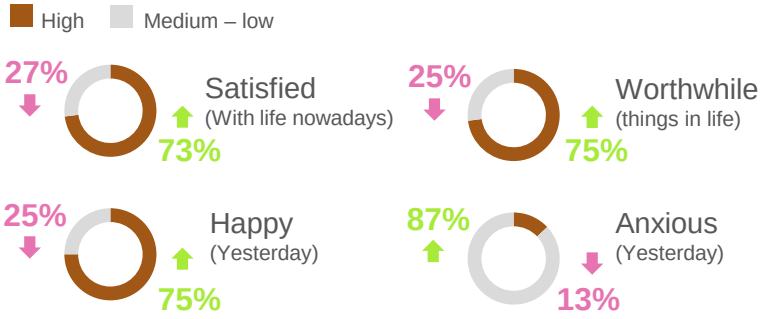
% agree (Top 3 Box)

46% ↓
I feel part of nature

80%
Being in nature makes me very happy

57%
I am taking more time to notice and engage with everyday nature

Wellbeing



↑ ↓ Over / under-index vs total sample (<80 / >120)

Base: Content but less engaged with nature (n=2,864)

Segment name: Content but less engaged with nature
Segment size: 22%

Covid-19 impact

Have noticed or done the following since coronavirus restrictions began

39% Visiting local green and natural spaces has been even more important to my wellbeing.

26% ↓ Nature/wildlife is more important than ever to my wellbeing.

40% I have spent less quality time outside with family and friends.

32% I am visiting local green and natural spaces more.

Doing more

Have increased amount of time spent and want to continue after restrictions ease

↓ **13%** Connecting with family or friends outdoors

↓ **12%** Working from home

38% Spending time outside

↓ **2%** Volunteering

24% Exercising outdoors

24% Noticing nature / wildlife

Doing less

Have reduced amount of time spent and want to continue after restrictions ease

44% The amount you drive or travel by car

↓ **25%** The amount of food your household throws away

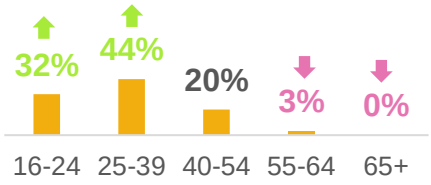
↓ **9%** The amount of meat you eat

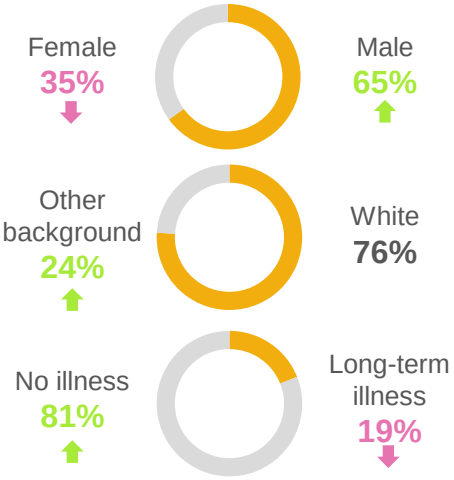
↑ ↓ Over / under-index vs total sample (<80 / >120)

Base: Content but less engaged with nature (n=2,864)

Segment name: Urbanites with low nature connection
Segment size: 15%

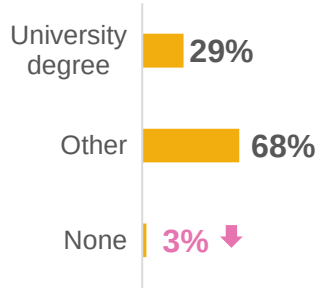
Who they are



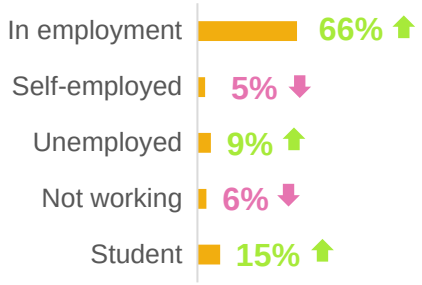


Education and work

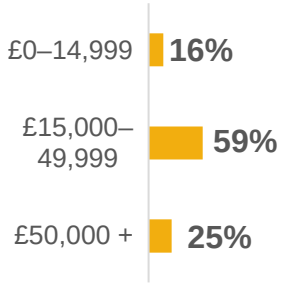
Qualifications



Employment status



Income



Living situation


42% Married, in civil partner-ship or cohabiting


40% Children in household


90% Urban


58% Single, separated, divorced or widowed


18% Dog


10% Rural

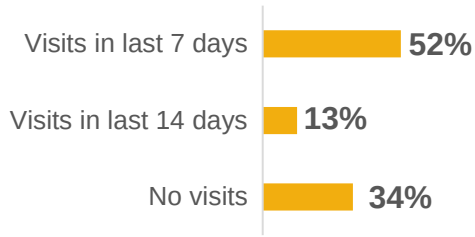
Over / under-index vs total sample (<80 / >120)

Base: Young urbanites with low nature connection (n=2,015)

Segment name: Urbanites with low nature connection
Segment size: 15%

Engagement with green and natural spaces

Visit recency – last 14 days



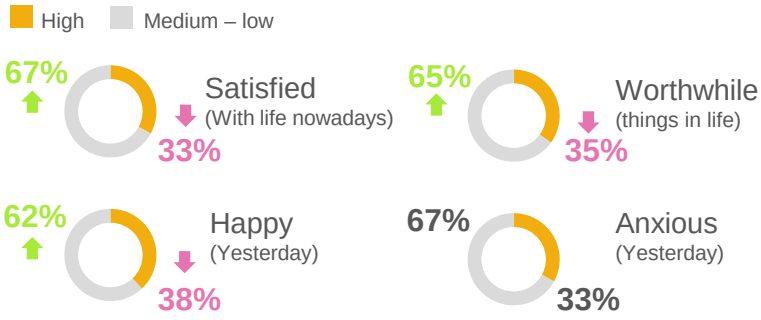
Top 5 activities (most recent visit)	69% Walking	17% ⬆ Cycling / running	15% Eating / drinking	13% Playing with children	10% ⬇ Wildlife watching
Top 5 types of places (most recent visit)	50% ⬆ Urban green space	12% Woodland or forest	10% River, lake or canal	8% ⬇ Fields / farmland / countryside	7% Beach / other coastline / sea

Nature connection

% agree (Top 3 Box)

- **35% ⬇** I feel part of nature
- **60% ⬇** Being in nature makes me very happy
- **36% ⬇** I am taking more time to notice and engage with everyday nature

Wellbeing



⬆ ⬇ Over / under-index vs total sample (<80 / >120)

Base: Young urbanites with low nature connection (n=2,015)

Segment name: Urbanites with low nature connection
Segment size: 15%

Covid-19 impact

Have noticed or done the following since coronavirus restrictions began

30% ↓ Visiting local green and natural spaces has been even more important to my wellbeing.

19% ↓ Nature/wildlife is more important than ever to my wellbeing.

33% I have spent less quality time outside with family and friends.

28% I am visiting local green and natural spaces more.

Doing more

Have increased amount of time spent and want to continue after restrictions ease

15% Connecting with family or friends outdoors

↑ **21%** Working from home

↓ **29%** Spending time outside

↓ **2%** Volunteering

23% Exercising outdoors

↓ **11%** Noticing nature / wildlife

Doing less

Have reduced amount of time spent and want to continue after restrictions ease

↓ **33%** The amount you drive or travel by car

27% The amount of food your household throws away

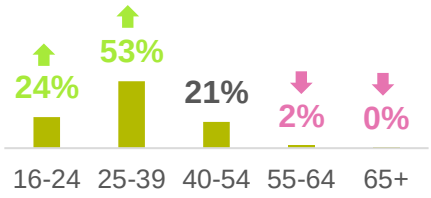
↓ **8%** The amount of meat you eat

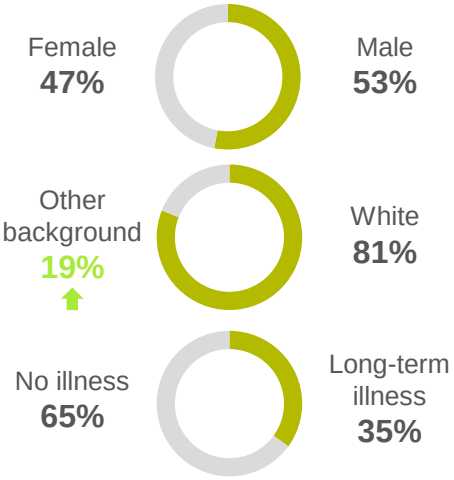
↑ ↓ Over / under-index vs total sample (<80 / >120)

Base: Young urbanites with low nature connection (n=2,015)

Segment name: Sociable nature lovers with busy lives
Segment size: 17%

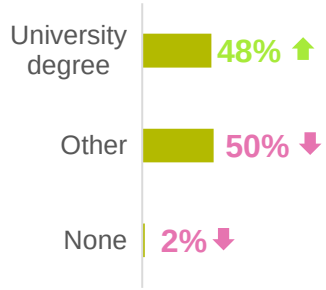
Who they are



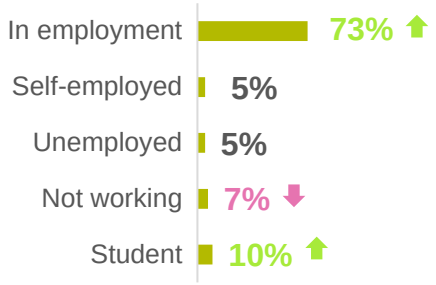


Education and work

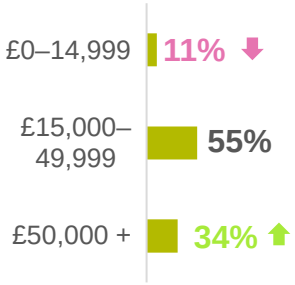
Qualifications



Employment status



Income



Living situation

64% Married, in civil partner-ship or cohabiting

72% Children in household

81% Urban

36% Single, separated, divorced or widowed

57% Dog

19% Rural

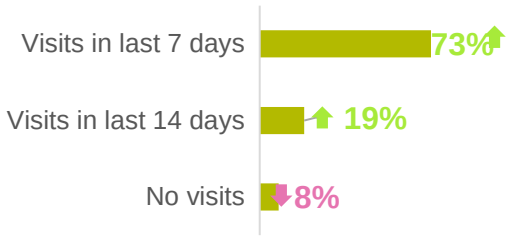
Over / under-index vs total sample (<80 / >120)

Base: Sociable nature lovers with busy lives (n=2,211)

Segment name: Sociable nature lovers with busy lives
Segment size: 17%

Engagement with green and natural spaces

Visit recency – last 14 days



Top 5 activities (most recent visit)

67%	27%	24% ↑	23% ↑	17% ↑
Walking	Wildlife watching	Playing with children	Eating / drinking	Cycling / running

Top 5 types of places (most recent visit)

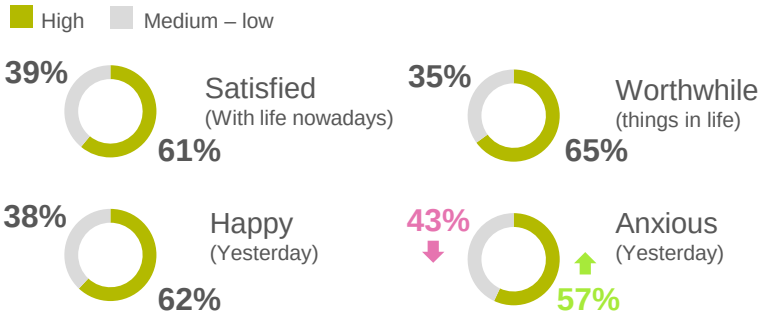
23% ↓	19% ↑	16%	11%	10%
Urban green space	Woodland or forest	Fields / farmland / countryside	River, lake or canal	Beach / other coastline / sea

Nature connection

% agree (Top 3 Box)

80% ↑	91%	87% ↑
I feel part of nature	Being in nature makes me very happy	I am taking more time to notice and engage with everyday nature

Wellbeing



↑ ↓ Over / under-index vs total sample (<80 / >120)

Base: Sociable nature lovers with busy lives (n=2,211)

Segment name: Sociable nature lovers with busy lives
Segment size: 17%

Covid-19 impact

Have noticed or done the following since coronavirus restrictions began

55% ↑ Visiting local green and natural spaces has been even more important to my wellbeing.

54% ↑ Nature/wildlife is more important than ever to my wellbeing.

25% ↓ I have spent less quality time outside with family and friends.

45% ↑ I am visiting local green and natural spaces more.

Doing more

Have increased amount of time spent and want to continue after restrictions ease

↑ **33%** Connecting with family or friends outdoors

↑ **24%** Working from home

↑ **51%** Spending time outside

↑ **5%** Volunteering

↑ **37%** Exercising outdoors

27% Noticing nature / wildlife

Doing less

Have reduced amount of time spent and want to continue after restrictions ease

↑ **55%** The amount you drive or travel by car

↑ **42%** The amount of food your household throws away

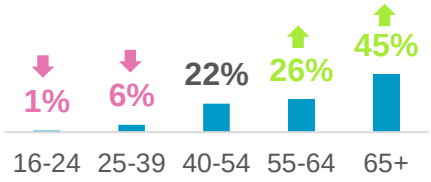
16% The amount of meat you eat

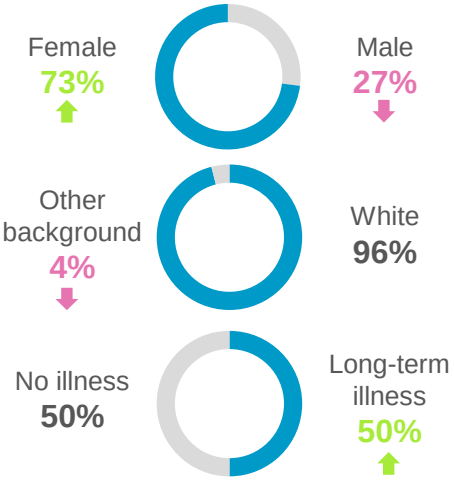
↑ ↓ Over / under-index vs total sample (<80 / >120)

Base: Sociable nature lovers with busy lives (n=2,211)

Segment name: Nature enthusiasts
Segment size: 17%

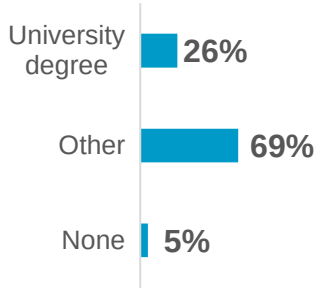
Who they are



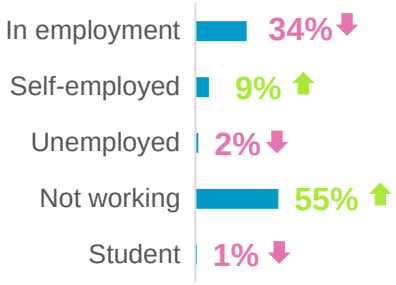


Education and work

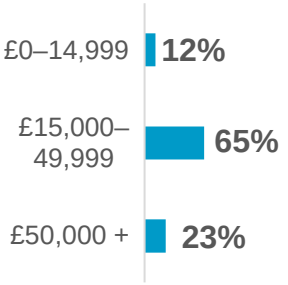
Qualifications



Employment status



Income



Living situation


75% Married, in civil partnership or cohabiting


16% Children in household


66% Urban


25% Single, separated, divorced or widowed


33% Dog


34% Rural

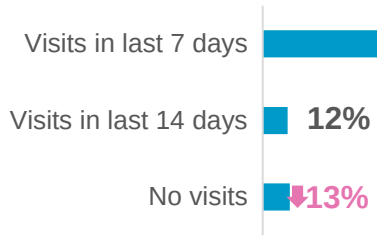
Over / under-index vs total sample (<80 / >120)

Base: Mature nature enthusiasts (n=2,229)

Segment name: Nature enthusiasts
Segment size: 17%

Engagement with green and natural spaces

Visit recency – last 14 days



Top 5 activities (most recent visit)

85%	34% ↑	10% ↓	6% ↑	5% ↓
Walking	Wildlife watching	Eating / drinking	Appreciating scenery from car	Cycling / running

Top 5 types of places (most recent visit)

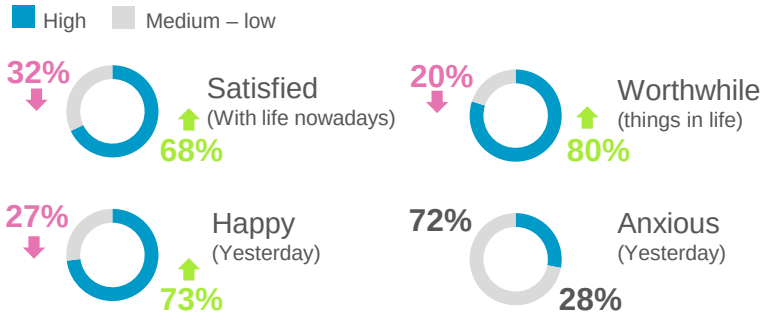
24% ↓	31% ↑	13%	9%	9%
Urban green space	Fields / farmland / countryside	Woodland or forest	River, lake or canal	Beach / other coastline / sea

Nature connection

% agree (Top 3 Box)

87% ↑	100%	96% ↑
I feel part of nature	Being in nature makes me very happy	I am taking more time to notice and engage with everyday nature

Wellbeing



↑ ↓ Over / under-index vs total sample (<80 / >120)

Base: Mature nature enthusiasts (n=2,229)

Segment name: Nature enthusiasts
Segment size: 17%

Covid-19 impact

Have noticed or done the following since coronavirus restrictions began

67% ↑ Visiting local green and natural spaces has been even more important to my wellbeing.

70% ↑ Nature/wildlife is more important than ever to my wellbeing.

33% I have spent less quality time outside with family and friends.

48% ↑ I am visiting local green and natural spaces more.

Doing more

Have increased amount of time spent and want to continue after restrictions ease

20% Connecting with family or friends outdoors

↓ 12% Working from home

↑ 59% Spending time outside

3% Volunteering

↑ 35% Exercising outdoors

↑ 60% Noticing nature / wildlife

Doing less

Have reduced amount of time spent and want to continue after restrictions ease

↑ 60% The amount you drive or travel by car

↑ 40% The amount of food your household throws away

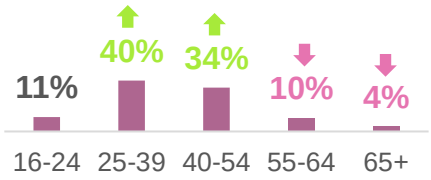
↑ 22% The amount of meat you eat

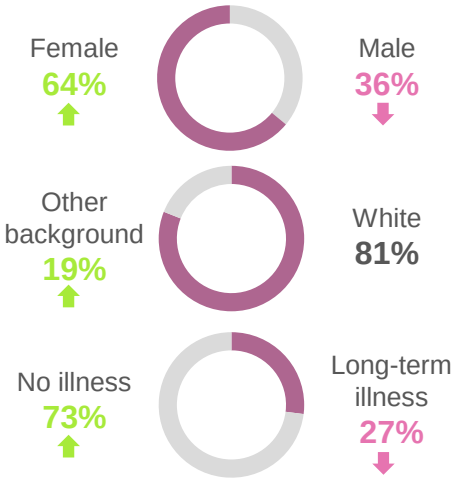
↑ Over / ↓ under-index vs total sample (<80 / >120)

Base: Mature nature enthusiasts (n=2,229)

Segment name: Nature loving urbanites
Segment size: 14%

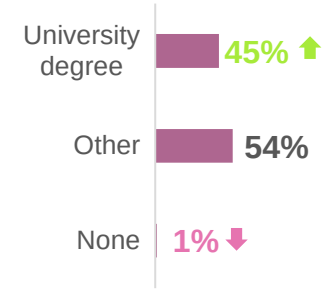
Who they are



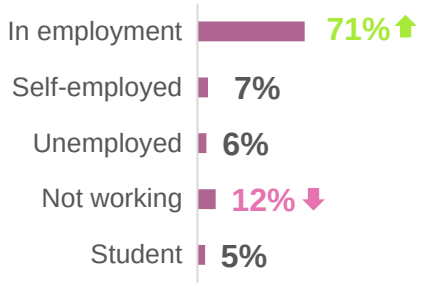


Education and work

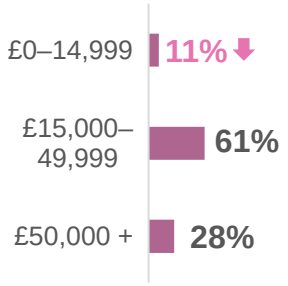
Qualifications



Employment status



Income



Living situation

52% Married, in civil partnership or cohabiting

29% Children in household

95% Urban

48% Single, separated, divorced or widowed

14% Dog

5% Rural

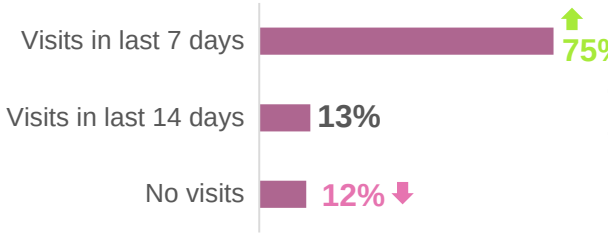
Over / under-index vs total sample (<80 / >120)

Base: Nature loving urbanites (n=1,863)

Segment name: Nature loving urbanites
Segment size: 14%

Engagement with green and natural spaces

Visit recency – last 14 days



Top 5 activities (most recent visit)	**81%** Walking	**23%** Wildlife watching	**15%** Eating / drinking	**12%** Playing with children	**11%** Cycling / running
Top 5 types of places (most recent visit)	**57%** Urban green space	**13%** River, lake or canal	**9%** Woodland or forest	**7%** Fields / farmland / countryside	**4%** Beach / other coastline / sea

Nature connection

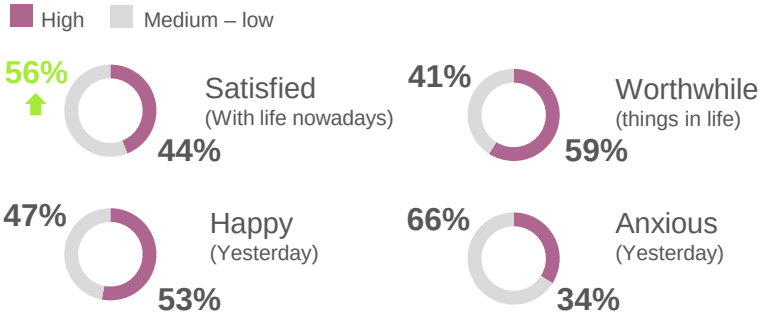
% agree (Top 3 Box)

72%
I feel part of nature

98%
Being in nature makes me very happy

86%
I am taking more time to notice and engage with everyday nature

Wellbeing



Over / under-index vs total sample (<80 / >120)

Base: Nature loving urbanites (n=1,863)

Segment name: Nature loving urbanites
Segment size: 14%

Covid-19 impact

Have noticed or done the following since coronavirus restrictions began

60% ↑ Visiting local green and natural spaces has been even more important to my wellbeing.

51% ↑ Nature/wildlife is more important than ever to my wellbeing.

31% I have spent less quality time outside with family and friends.

44% ↑ I am visiting local green and natural spaces more.

Doing more

Have increased amount of time spent and want to continue after restrictions ease

20% Connecting with family or friends outdoors

↑ **27%** Working from home

46% Spending time outside

3% Volunteering

31% Exercising outdoors

35% Noticing nature / wildlife

Doing less

Have reduced amount of time spent and want to continue after restrictions ease

39% The amount you drive or travel by car

37% The amount of food your household throws away

↑ **18%** The amount of meat you eat

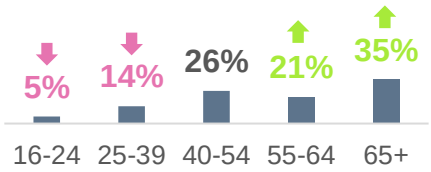
↑ Over / ↓ under-index vs total sample (<80 / >120)

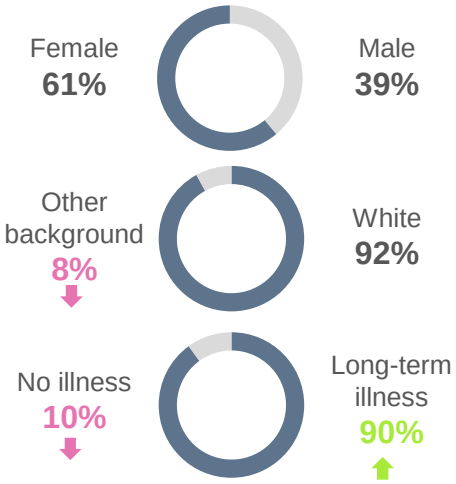
Base: Nature loving urbanites (n=1,863)

Segment name: Infrequent outdoor visitors with medium nature connection

Segment size: 15%

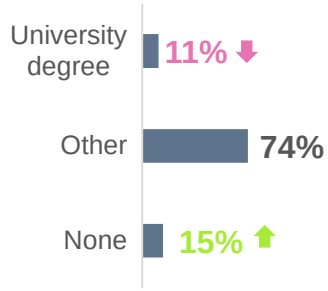
Who they are



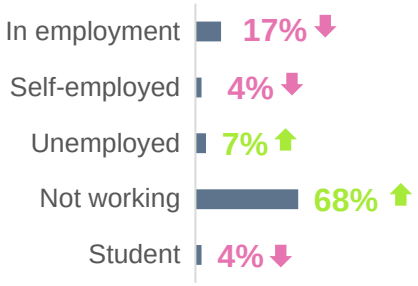


Education and work

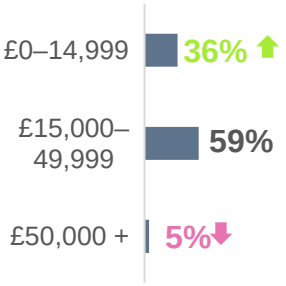
Qualifications



Employment status



Income



Living situation

48% Married, in civil partnership or cohabiting

16% Children in household

87% Urban

52% Single, separated, divorced or widowed

21% Dog

13% Rural

Over / under-index vs total sample (<80 / >120)

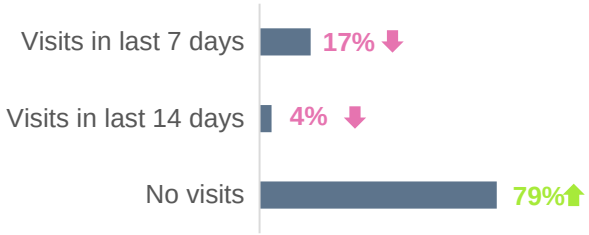
Base: Disconnected with long-term health issues (n=1,966)

Segment name: Infrequent outdoor visitors with medium nature connection

Segment size: 15%

Engagement with green and natural spaces

Visit recency – last 14 days



Top 5 activities (most recent visit)	77% Walking	25% Wildlife watching	12% Eating / drinking	3% Fishing	3% Playing with children
Top 5 types of places (most recent visit)	36% Urban green space	15% Fields / farmland / countryside	11% River, lake or canal	9% Beach / other coastline / sea	8% Woodland or forest

Nature connection

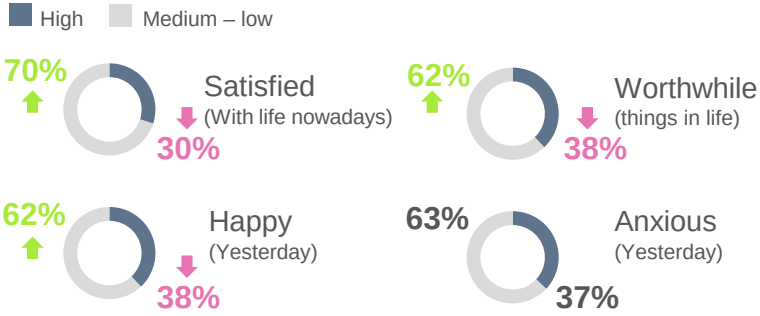
% agree (Top 3 Box)

49% I feel part of nature

82% Being in nature makes me very happy

63% I am taking more time to notice and engage with everyday nature

Wellbeing



Over / under-index vs total sample (<80 / >120)

Base: Disconnected with long-term health issues (n=1,966)

Segment name: Disconnected with long-term health issues
Segment size: 15%

Covid-19 impact

Have noticed or done the following since coronavirus restrictions began

18% ↓ Visiting local green and natural spaces has been even more important to my wellbeing.

34% Nature/wildlife is more important than ever to my wellbeing.

52% ↑ I have spent less quality time outside with family and friends.

9% ↓ I am visiting local green and natural spaces more.

Doing more

Have increased amount of time spent and want to continue after restrictions ease


8% ↓ Connecting with family or friends outdoors


6% ↓ Working from home


15% ↓ Spending time outside


1% ↓ Volunteering


6% ↓ Exercising outdoors


24% Noticing nature / wildlife

Doing less

Have reduced amount of time spent and want to continue after restrictions ease


30% ↓ The amount you drive or travel by car


29% The amount of food your household throws away


14% The amount of meat you eat

↑ ↓ Over / under-index vs total sample (<80 / >120)

Base: Disconnected with long-term health issues (n=1,966)

11. Annex 2: Social media analysis

Figure A2.1 Most common discussion terms in social media analysis

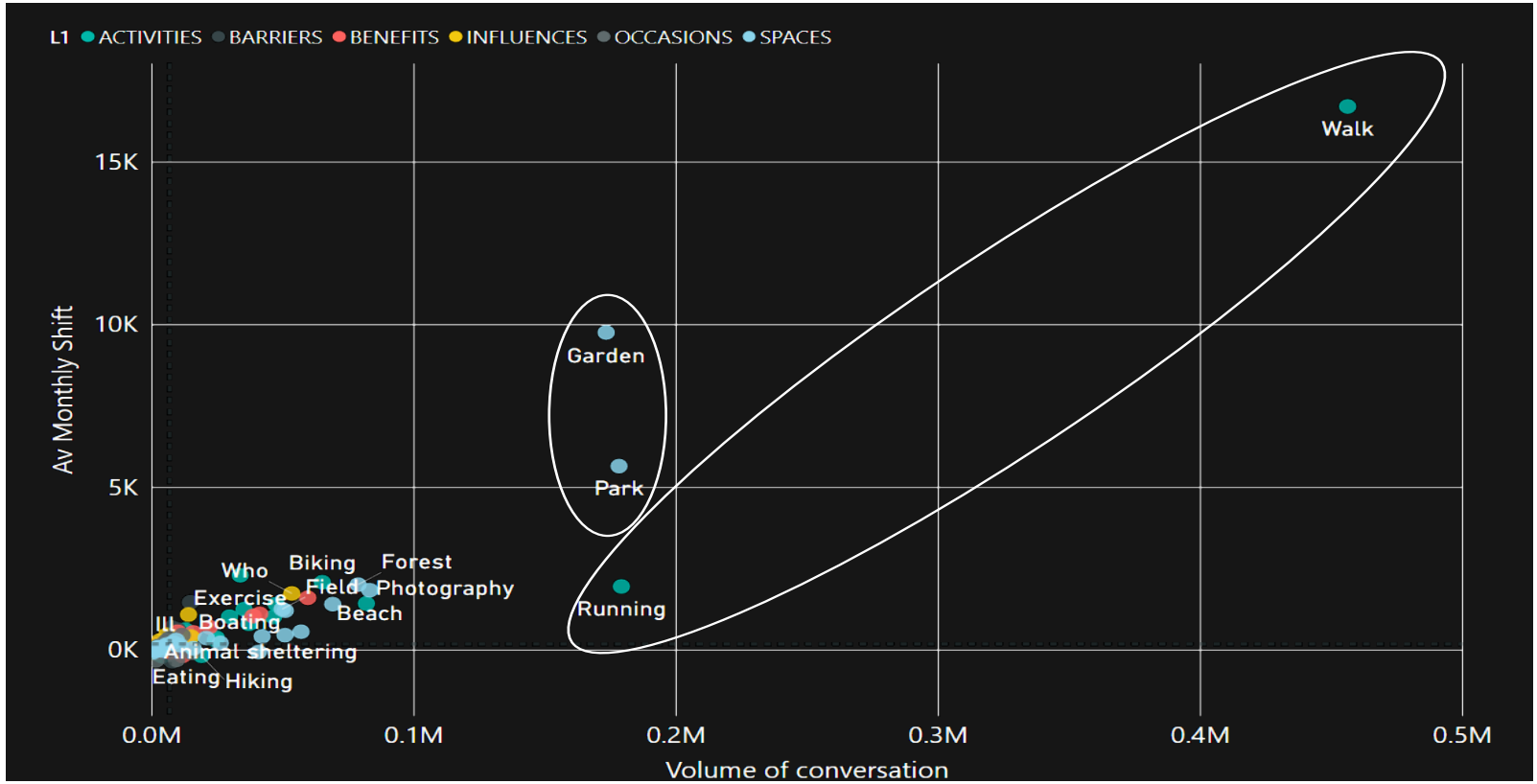


Figure notes

Source:

(1) All social posts

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Figure A2.2 Activities in rural green spaces

Pre-COVID (L3s)

Top10 volume	Top10 index
Walk	Golf
Running	Football
Photography	*Backpacking*
Visiting	Playing
Biking	*Cricket*
Climbing	*Sport*
Hiking	*BBQ*
Trips	*Rugby*
Relatives	Hiking
Friends	Hike

COVID (L3s)

Top10 volume		Top10 index	
Walk		Playing	↑
Running		Hike	↑
Biking	↑	Hiking	↑
Climbing	↑	*Canoeing*	↑
Photography	↓	*Climbing*	↑
Visiting	↓	*Hunting*	↑
Friends	↑	*Trips*	↑
Hiking		Golf	↓
Trips		Football	↓
Playing	↑	*Trekking*	↑

↑↓ Lenses shift by +- 2 spaces in the ranking

▮ Lenses exclusive to preCOVID or COVID ranking

Figure notes

Source:

(1) All social posts related to (L3: Field or L3: Forest or L3: Hills or L3: National Parks) and L1: Activities

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Figure A2.3 Social media analysis: Activities in coastal blue spaces

Pre-COVID (L3s)

Top10 volume	Top10 index
Walk	Meditating
Fishing	Fishing
Running	Surfing
Photography	*Diving*
Visiting	Canoeing
Trips	*Sightseeing*
Friends	Music
Relatives	Swimming
Biking	Boating
Boating	Yoga

COVID (L3s)

Top10 volume		Top10 index	
Walk		Meditating	
Running		Fishing	
Fishing		Swimming	↑
Photography		Surfing	
Visiting		Canoeing	
Trips		Music	
Biking	↑	Boating	↑
Swimming	↑	*Tourist*	↑
Relatives		Yoga	
Boating		*Poetry*	↑

↑↓ Lenses shift by +- 2 spaces in the ranking

▮ Lenses exclusive to preCOVID or COVID ranking

Figure notes

Source:

(1) All social posts related to (L3: Beach or L3: Ocean or L3: Coast) and L1: Activities

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Figure A2.4 Social media analysis: Activities in inland blue spaces

Pre-COVID (L3s)

Top10 volume	Top10 index
Walk	Meditating
Running	Boating
Fishing	*Triathlon*
Photography	Canoeing
Boating	Wildlife photography
Visiting	Fishing
Biking	*Backpacking*
Trips	*Hunting*
Hiking	*Growing plants*
Canoeing	*Birdwatching*

COVID (L3s)

Top10 volume	Top10 index
Walk	Boating
Running	Fishing ↑
Fishing	*Swimming* ↑
Boating	Wildlife photography
Photography	Canoeing
Biking	*Landscaping* ↑
Visiting	Meditating ↓
Trips	*Drinking* ↑
Hiking	*Music* ↑
Swimming ↑	*Exploring* ↑

↑↓ Lenses shift by +- 2 spaces in the ranking

▮ Lenses exclusive to preCOVID or COVID ranking

Figure notes

Source:

(1) All social posts related to (L3: River or L3: Canal or L3: Lake or L3: Pond or L3: Creek or L3: Stream or L3: Reservoir) and L1: Activities

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Figure A2.5 Social media analysis: Activities in gardens

Pre-COVID (L3s)

Top10 volume	Top10 index
Gardening	Gardening
Walk	Landscaping
Running	Horticulture
Photography	Growing plants
Visiting	Birdwatching
Landscaping	*Volunteering*
Relatives	Sitting
Friends	*Painting*
Horticulture	*Drawing*
Biking	*Chatting*

COVID (L3s)

Top10 volume		Top10 index	
Walk		Gardening	
Gardening		*Pottering*	↑
Running		Landscaping	
Visiting		Horticulture	
Relatives	↑	Growing plants	
Photography	↓	Birdwatching	
Friends		*BBQ*	↑
Exercise	↑	*Wildlife photography*	↑
Landscaping	↓	*Workout*	↑
Biking		Sitting	↓

↑↓ Lenses shift by +- 2 spaces in the ranking

▮ Lenses exclusive to preCOVID or COVID ranking

30

Figure notes

Source:

(1) All social posts related to L3: Garden and L1: Activities

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Figure A2.6 Social media analysis: Benefits of exercise outdoors

Exercise benefits - Pre

Top10 volume	Top10 index
Health	Strength
Mental health	Stress
Love	Fresh air
Wellbeing	Positivity
Knowledge	Recovery
Fun	*Bones*
Positivity	Health
Happy	Wellbeing
Inspiration	Mental health
Fresh air	*Inspiration*

Exercise benefits - COVID

Top10 volume		Top10 index	
Health		Stress	
Mental health		Fresh air	
Love		Strength	↓
Fresh air	↑	Health	↑
Wellbeing		Mental health	↑
Happy	↑	*Immune system*	↑
Positivity		Wellbeing	
Knowledge	↓	*Sanity*	↑
Fun	↓	Recovery	↓
Relax	↑	Positivity	↓

↑↓ Lenses shift by +- 2 spaces in the ranking

▮ Lenses exclusive to preCOVID or COVID ranking

Figure notes

Source:

(1) All social posts related to L3: Exercise and L1: Benefits

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Figure A2.7 Social media analysis: Benefits of walking

Walking benefits - Pre

Top10 volume	Top10 index
Health	Fresh air
Love	Peaceful
Mental health	*Stress*
Happy	*Wellbeing*
Fun	Quiet
Wellbeing	Discovery
Relax	Calm
Knowledge	Trust
Discovery	Colours
Inspiration	*Health*

Walking benefits - COVID

Top10 volume		Top10 index	
Health		Peaceful	
Love		Fresh air	
Mental health		Quiet	↑
Happy		*Inspiration*	↑
Quiet	↑	Colours	↑
Inspiration	↑	*Immune system*	↑
Knowledge		Discovery	
Wellbeing	↓	Calm	
Fresh air	↑	*Sunset*	↑
Fun	↓	Trust	↓

↑↓ Lenses shift by +- 2 spaces in the ranking

▮ Lenses exclusive to preCOVID or COVID ranking

Source:

(1) All social posts related to L3: Walking and L1: Benefits

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)

Figure A2.8 Social media analysis: Benefits of time in rural green spaces

Pre-COVID (L3s)

Top10 volume	Top10 index
Love	*Stress*
Fun	Recovery
Health	Strength
Happy	Challenge
Relax	Learning
Knowledge	*Wellbeing*
Discovery	*Discovery*
Challenge	*Inspiration*
Inspiration	Knowledge
Wellbeing	*Restored*

COVID (L3s)

Top10 volume		Top10 index	
Love		*Immune system*	↑
Happy	↑	Strength	
Health		Recovery	
Fun	↓	*Healing*	↑
Relax		*Bones*	↑
Knowledge		*Sunrise*	↑
Quiet	↑	Challenge	↓
Discovery		Learning	↓
Challenge		*Tranquility*	↑
Flowers	↑	Knowledge	

↑↓ Lenses shift by +- 2 spaces in the ranking

▮ Lenses exclusive to preCOVID or COVID ranking

Source:

(1) All social posts related to (L3: Field or L3: Forest or L3: Hills or L3: National Parks) and L1: Benefits

(2) Data collected between January 1st 2019 and December 31st 2020 (inclusive)