

Engagement with nature and Covid-19 restrictions

Quantitative analysis 2020

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Executive summary

This study aimed to explore people's connection with trees, woodlands and wider nature before and during the Covid-19 pandemic. An online survey ran from mid-June until the end of July 2020. 2,115 responses were received with nearly three quarters being from women. About 60% of respondents were from urban areas and the majority were white. Many in the sample are already connected to nature via interest in the nation's forests and connection to Forestry England; often via social media.

Overall

Visits to 'woodlands or forests', and 'fields, farmlands, countryside' were more resilient to Covid-19 restrictions than other nature spaces, with respondents who visited these areas dropping by less compared to some other nature spaces.

More than 80% of respondents reported being in their garden more, while more than 50% reported an increase in appreciation of trees in their street, garden, park, along footpaths, and in woodlands.

Two-thirds of people reported an increase in 'time taken to appreciate nature', 'level of happiness when in nature' and 'feelings of connection to nature'.

Eight out of the 10 benefits listed were reported as being 'significantly better' or 'having some change for the better' by more than 50% of respondents, with a 'feeling of escape and freedom' coming at the top of the list.

Over 50% of respondents stated that they would 'definitely sustain' any physical activity increases they had made in the long-term.

The key barrier to enjoying nature reported by more than 50% of respondents was concern about 'overcrowding and not being able to keep their distance from others'.

Differences across respondents

Young people (16-34)

- Significantly more motivated to visit nature for 'mental health and wellbeing' benefits, 'exercise', 'exploration' and 'to take a break from work or from electronic devices'.
- Significantly more likely to report a range of positive benefits of engagement with nature versus older respondents.
- Significantly more resilient to changes in happiness during Covid-19 restrictions versus older (age 55+) respondents.
- Significantly lower life satisfaction than older (age 65+) respondents.
- Significantly more likely to report 'not being able to keep their distance and concerns about breaking restrictions' as barriers to spending time outside in natural spaces.
- Significantly more likely to report 'not being able to meet those they usually meet' as a barrier to engaging with nature.

Women

- Significantly more likely to report an increase in nature connection than males.
- Significantly more likely to report an increase across the full range of motivations than males.
- Significantly more likely to report an increase in a range of positive benefits of engagement with nature versus males.

Physically active people (doing 150 mins or more per week)

- Increased their physical activity following the introduction of Covid-19 restrictions.

- Significantly more likely to list 'exploring local natural spaces', 'getting fresh air' and 'challenging themselves' as motivations for visiting nature.
- Significantly higher 'how worthwhile are the things you do in your life' scores than all other less active groups.
- Significantly higher 'life satisfaction' than all other less active groups.
- Significantly less likely to report barriers to spending time outside due to Covid-19 restrictions.

Physically inactive people (doing less than 30 minutes per week)

- Decreased activity following introduction of Covid-19 restrictions.
- Significant decrease in visits to: 'fields, farmland, countryside'; 'rivers, lakes, canals'; 'urban green space'; and 'woodland or forest'.
- Significantly lower 'worthwhile' scores than the more active groups.
- Significantly lower 'life satisfaction' than all other activity groups.

Households with children (under-16)

- Showed increases in visits to woods and forests.
- Significant decreases in visits to 'urban greenspace'.
- Significantly more likely to report 'lack of facilities' (toilets/benches etc.) due to Covid-19 restrictions as a barrier to spending time outside in nature.

Conclusions

The respondents to the survey were already interested in or connected to nature however, this connection often increased during the Covid-19 restrictions particularly for those who were physically active. Physically active people maintained their wellbeing to a greater extent than those who were less physically active. With limited leisure options during the restrictions exercising in nature became an activity that was discussed and undertaken by many. It is clear from the

research that for many people engaging with nature (from appreciating, feeling connected to and accessing nature) increased and helped to support them in maintaining their wellbeing during the restrictions and pandemic society faced. Many respondents felt that the changes they had made they would aim to sustain once restrictions were reduced or lifted. Therefore, respondents felt it was important to keep the positive changes that they were able to make during the pandemic.

A report covering surveys in the UK and Scotland (Olsen and Mitchell, 2020) found that the majority of users of green space stated that these spaces benefited their mental health during lockdown (65% in the UK survey, 63% in the Scotland survey and 68% in this survey). A similar report by the Ramblers found 68% reported green spaces as helping with mental wellbeing (Ramblers, 2020). Similar to Sport England (2020) findings we found levels of happiness fell and anxiety rose amongst respondents during Covid-19. However, this survey found that motivations to connect with nature increased along with the benefits gained.

The All-Party Parliamentary Group for a Green New Deal report (2020) engaged with a wide range of British society over the summer of 2020 and found that there is a strong desire for a greener and fairer society with more green spaces, liveable streets, less traffic, and better access to good quality nature spaces for all. The research outlined in this report highlights the important role that trees, woodlands and wider nature can play as part of people's everyday lives and in supporting and protecting their wellbeing under the very difficult circumstances of a global pandemic.

1 Introduction

The Covid-19 pandemic was first identified in December 2019 in Wuhan in China and the World Health Organisation declared it a global pandemic in mid-March 2020. Restrictions on people's movements in the United Kingdom (UK) came into place on 23rd March 2020. Initial restrictions were broad with the complete closure of shops (except for food retailers), schools, hospitality and leisure venues and included people only being allowed outdoors for one hour a day in order to undertake exercise, and only with people from their household. Restrictions put in place by the government have changed over time as the number of cases of Covid-19 and deaths associated with it reduced (Figure 1). With limited options to go out and limited leisure options exercising in nature (such as woodlands, local greenspaces including parks etc, as well as the local countryside and footpaths) became an activity that was discussed and undertaken by many. There was an increase in social media traffic extolling the benefits of getting out into local nature spaces for both people's physical health but also their mental wellbeing. A Public Health England report highlighted that the pandemic has made many people more aware of how much people value and rely on nature to support their wellbeing (Public Health England, 2020). Research on forest use in Germany (Derks et al. 2020) found an increase in forest visitor numbers and shifts in the patterns of visits through the day during Covid-19 restrictions. The research which included interviews with forestry professionals highlighted that they are seeing new visitors including young people, families and non-locals. Forestry England's marketing team was able to switch its communication messages to outline what tree and woodland related activity people could undertake at home with or without actual woodland site access. Forestry England has a strong focus on wellbeing even though at the beginning of the lockdown all of its sites were closed to the public apart from local people who could access the sites via walking, running or cycling. A survey undertaken for the Royal Society for the Protection of Birds (2020) found that

people thought nature was important for their health and wellbeing and nearby nature was particularly beneficial during Covid-19. The People and Nature survey (Natural England, 2020) found that nature has played an important part in helping people through the Covid-19 restrictions with almost nine in 10 adults in England stating that being in nature makes them very happy, and with four in 10 adults spending more time in nature during the pandemic with health and wellbeing being the main reason for getting outdoors. Figure 1 shows some of the phases of restrictions. As this report has been finalised in October 2020 there are increasing restrictions coming into place across the UK.

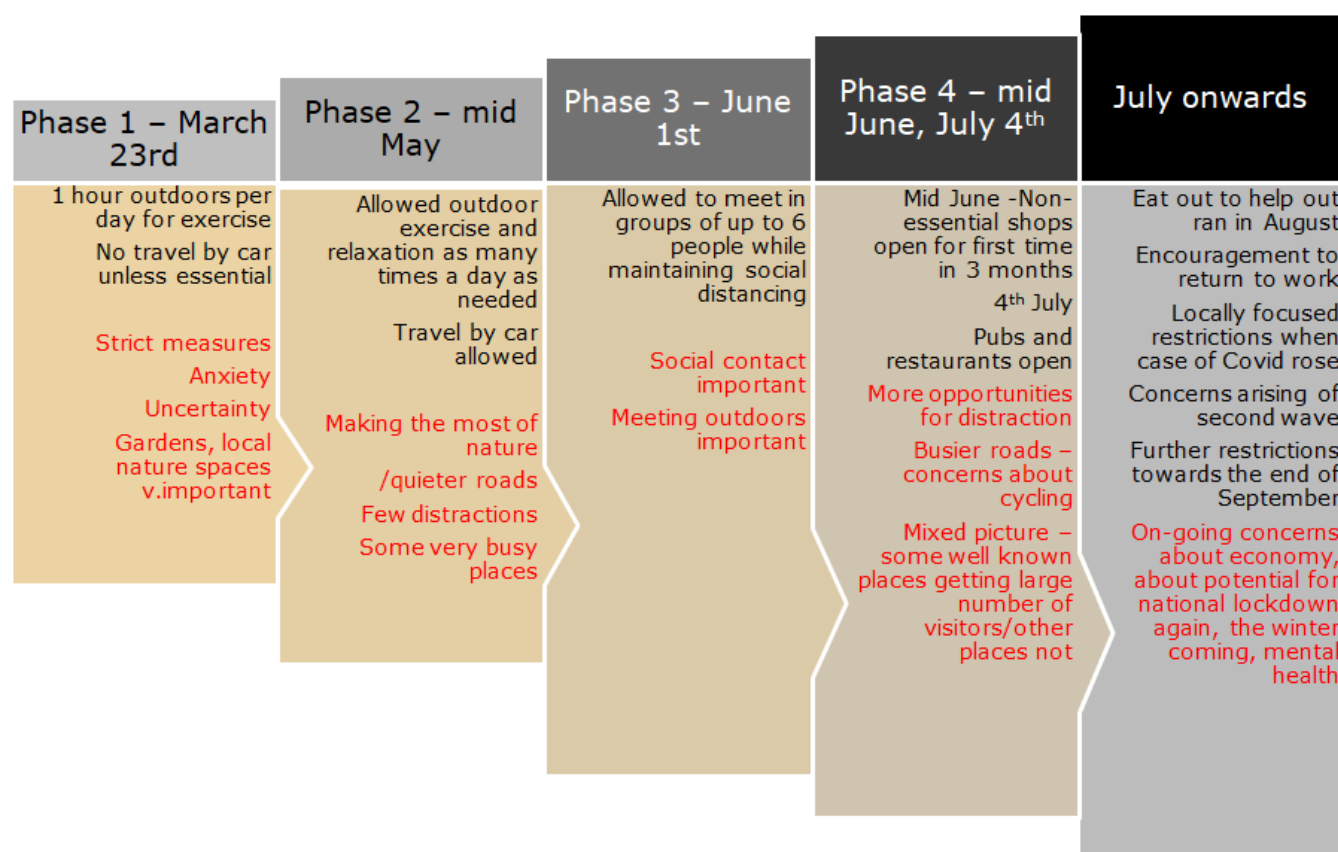


Figure 1 A broad outline of different phases of restrictions due to Covid-19

Aims and objectives

The overall aim of this research was to explore whether any changes had been brought about due to the Covid-19 restrictions and in particular to explore any changes in the following:

- Visits and engagement with nature
- Feelings of connection to nature
- Motivations and wellbeing benefits
- Physical activity levels
- Barriers to accessing nature
- Overall wellbeing.

The survey also sought to identify whether respondent's felt any changes they made would last or were temporary.

2 Methodology

The methods used were an online survey and interviews with a sample of respondents who completed the survey.

Online survey

The survey was developed to explore changes in visits to nature including woodlands, whether people's feelings of connection to nature changed, whether motivations and wellbeing benefits changed, as well physical activity levels and barriers to engaging with nature due to the Covid-19 restrictions (see Appendix 1 for the survey questions). The survey questions were developed with input from Forestry England, Sport England and members of the Social and Economic Research Group in Forest Research. The Sport England 'short active lives' physical activity questions were included in the survey as well as the Office for National (ONS) personal wellbeing questions, known as the ONS-4. Demographic data were gathered on age, gender, ethnicity, number of people including children in the

household, and employment status including 'employed but furloughed', and post code data which provides an opportunity to look at deprivation and location.

Forestry England (FE) were able to provide incentives for survey completion including 3 memberships to the FE site of the winner's choice and 4 Go-outdoor vouchers. FE set up a webpage for the survey which encouraged people to complete the survey, directed them to the survey and outlined the terms and conditions of the survey and the prizes.

The survey instrument used was 'Smart Survey', the introduction to the survey outlined what the survey was about, what prizes were available to those who wanted to be entered into the prize draw. It outlined how long the survey would take to complete, that personal data would not be shared, and the data would be treated, stored and analysed in line with the requirements of the Data Protection Act 2018. It also highlighted that the survey was voluntary.

The survey was publicised in both of FE's June newsletters, these are split into family and non-family interest. According to FE it was the most clicked on piece of content in both newsletters, however greater numbers clicked on it from the 'non-family' group. It was publicised by FE through Instagram, Facebook and Twitter and FR tweeted about the survey on numerous occasions, local FE staff in various districts were also encouraged to publicise the survey through their social media channels. Sport England also promoted the survey. The survey was also sent to the Black Environment Network to ask it to be passed to its network and encourage more diverse representation.

The survey ran from mid-June until the 31st July. In total 2,115 full responses were completed.

2.1.1 Qualitative data

At a number of points in the survey respondents were asked to leave a qualitative comment. The key areas where comments have been made include the following, with number of those responding to each comment given in brackets:

- Whether time spent in nature has changed due to Covid-19 restrictions (n=284)
- Whether their appreciation of trees (in their garden, their or nearby streets, in local parks, along footpaths, in woods) has changed (n=1034)
- Any changes to wellbeing benefits from nature (n=252)
- Barriers to accessing and engaging with nature due to the Covid-19 restriction (n=316)
- Recent experiences in green and natural spaces that have changed or are different due to Covid-19 restrictions (n=1447)

In total 3,333 qualitative comments were made.

Telephone interviews

At the end of the survey respondents were asked if they would be willing to take part in a short telephone interview at a time convenient to them. 567 people agreed to be re-contacted for an interview. In order to identify a sample of these respondents we decided to focus on key criteria which included a focus on those whose:

1. Physical activity had increased, stayed the same, decreased
2. Feelings of connection to nature had increased, stayed the same, decreased
3. Lived in urban, peri-urban or rural areas (identified by postcode)

52 people were contacted, and 25 agreed to be interviewed.

Note: The results of the qualitative survey comments and telephone interviews will be provided in a separate paper. They are mentioned in this report to illustrate that this document is one aspect of the research.

Data analysis

Postcode data were cleaned and matched to Office for National Statistics and Scottish government databases to link to the Index of Multiple Deprivation (IMD) and Urban/Rural classifications (aligned and reduced to urban, peri-urban, and rural groupings).

Each main question was analysed separately, with sub-questions and key demographics (physical activity levels, change in physical activity during Covid-19 restrictions, gender: age main effects and interaction, household size (under/over 16s), index of multiple deprivation and urban/peri-urban/rural location) included in the model, plus interactions between sub-questions and each demographic.

Scaled data (e.g. decrease, same, increase) were reduced to binary data (e.g. decrease/same, increase) to aid model fit. Data were analysed using generalised linear mixed effects models, which are regression models that allow different types of responses (e.g. a binary response) and also allow for the effects of individual respondents (to account for, e.g., a single respondent being very negative for all sub-questions versus a single respondent with a mix of positive and negative responses for sub-questions) through “random effects” in the model. Some responses required different model types (ordered logistic models for wellbeing questions, zero-inflated model for frequency of visits).

Having fitted relevant models, non-significant predictors were removed to produce a final best fit model. Responses for relevant predictors were estimated and displayed in key analysis charts, with all model results and significant predictor results stored in supplementary tables for future reference.

Who answered the survey?

The majority of age groups were well-represented in the survey responses (more than 10% of respondents per category) with the exception of the 16-24 years age group (19 respondents only) (Figure 2). Therefore the 16-24 age group has been

combined with the 25-34 age group to provide a suitable sample size. Almost three quarters of respondents were female.

The majority of individuals (98%) were white. Index of Multiple Deprivation (IMD) deciles 5-10 (least deprived) were over-represented in the sample. IMD deciles 1-2 were particularly under-represented (i.e. most deprived).

Just over 60% of individuals were from urban postcodes; just over 20% of individuals were from rural postcodes (Figure 3).

Approximately half of people lived in two person households and about 12% of respondents lived alone. Approximately 60% of individuals lived in households with no under-16s.

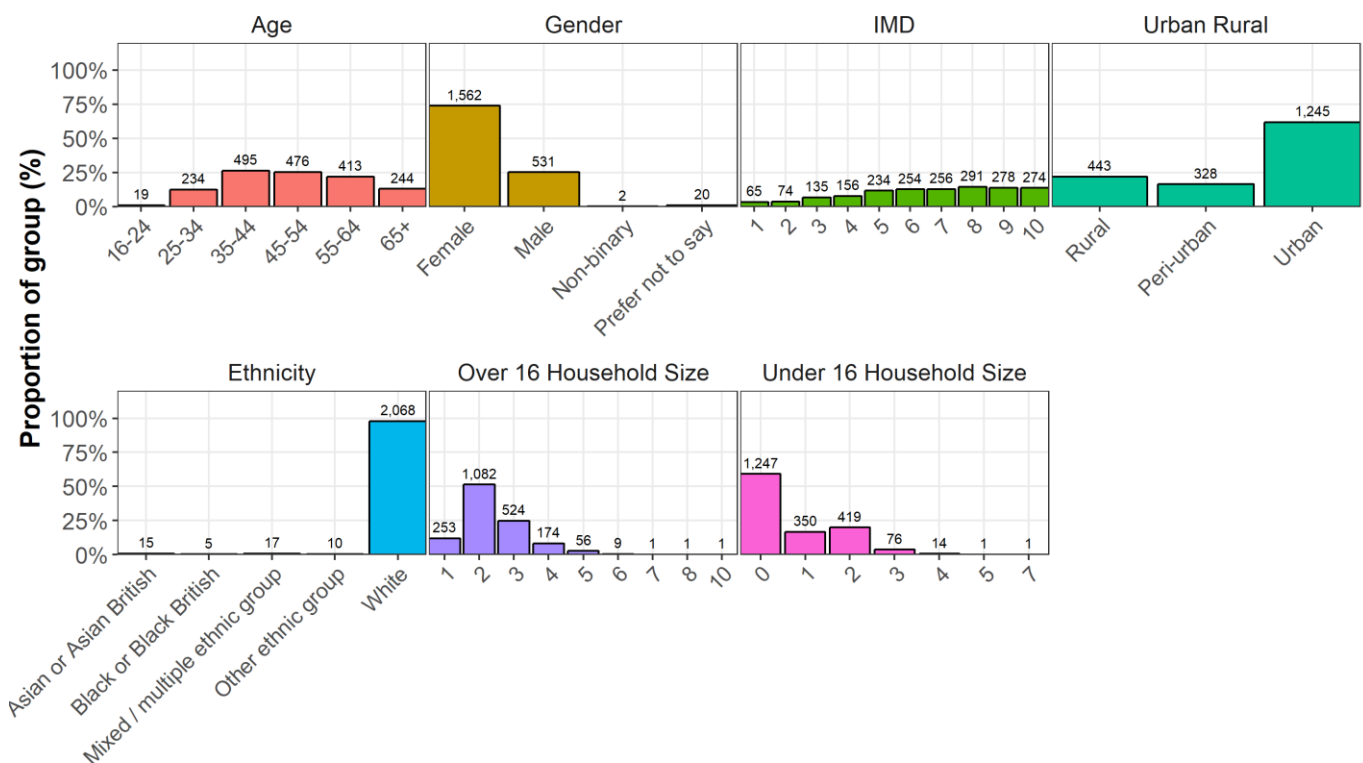


Figure 2 Demographics of survey respondents

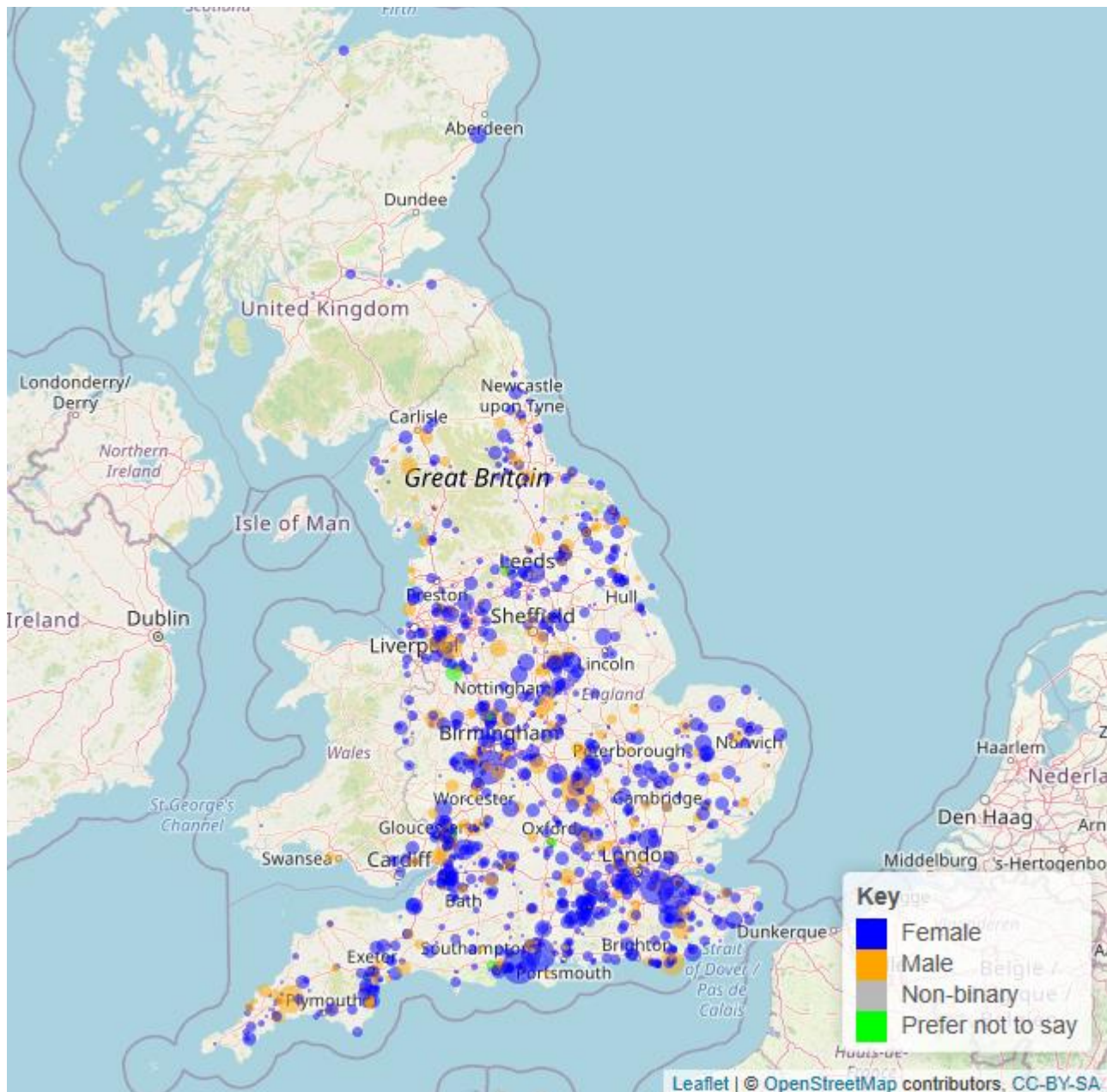


Figure 3 Distribution of respondents across mainly England. Household size = size of circle.

Understanding the sample

We outline above how the survey was publicised i.e. via FE, SE and FR and via the Black Environment Network. However, there is recognition that those who are aware of or follow FE on Facebook, Twitter or Instagram and those who receive FE's newsletters are likely to be existing users of FE sites and interested in accessing

and enjoying woodlands and forests. Those who follow and take note of Sport England's social media are likely to be interested in physical activity. This is not a representative sample of the British or English population, it is a sample of people interested in nature and was publicised in England, and with a particular interest potentially in woodlands and the types of activities that can be undertaken in woodlands, including family activities.

In June 2020 FE's Twitter follower demographics were 57% men and the majority were aged 25-34 (34%) and 35-44 (28%), for FE's Instagram followers these in June were 56% women and the majority aged 25-34 (31%) and 35-44 (32%) pers communication based on web analytics).

In July FE Facebook followers were 73% women with the largest group in the 35-44 aged group (43%) (Facebook Pages for Forestry England, July 2020). From the types of followers of FE social media, the survey gender response mirrors the percentage of women following FE on Facebook and FE confirmed that the survey was shared most through Facebook.

3 Results

Have visits to nature changed due to Covid-19 restrictions?

Visits to 'woodlands or forests', and 'fields, farmlands, countryside' were most resilient to Covid-19 restrictions, with respondents who visited these areas dropping by less than 20% in both cases (Figure 4, note: different pre Covid-19 restriction (12 months) and during Covid-19 restriction (~4 months) time period, so not like-for-like comparison). Visits to 'beaches/coastline', 'historic properties/country parks', 'nature/wildlife reserves' and 'hills, mountains, moorlands' were more affected by Covid-19 restrictions, with respondents who visited these areas dropping by over 50% in all cases.

There were a number of significant drivers of a decrease in visits to specific locations: individuals with under-16s in their households showed significant decreases in visits to 'urban greenspace'. Households with no under-16s showed significant decreases to 'woodland and forests'.

Less active individuals (less than 30 mins of physical activity per week) were significantly more likely to decrease their visits to four specific locations: 'fields, farmland, countryside'; 'rivers, lakes, canals'; 'urban green space'; 'woodland or forest'.

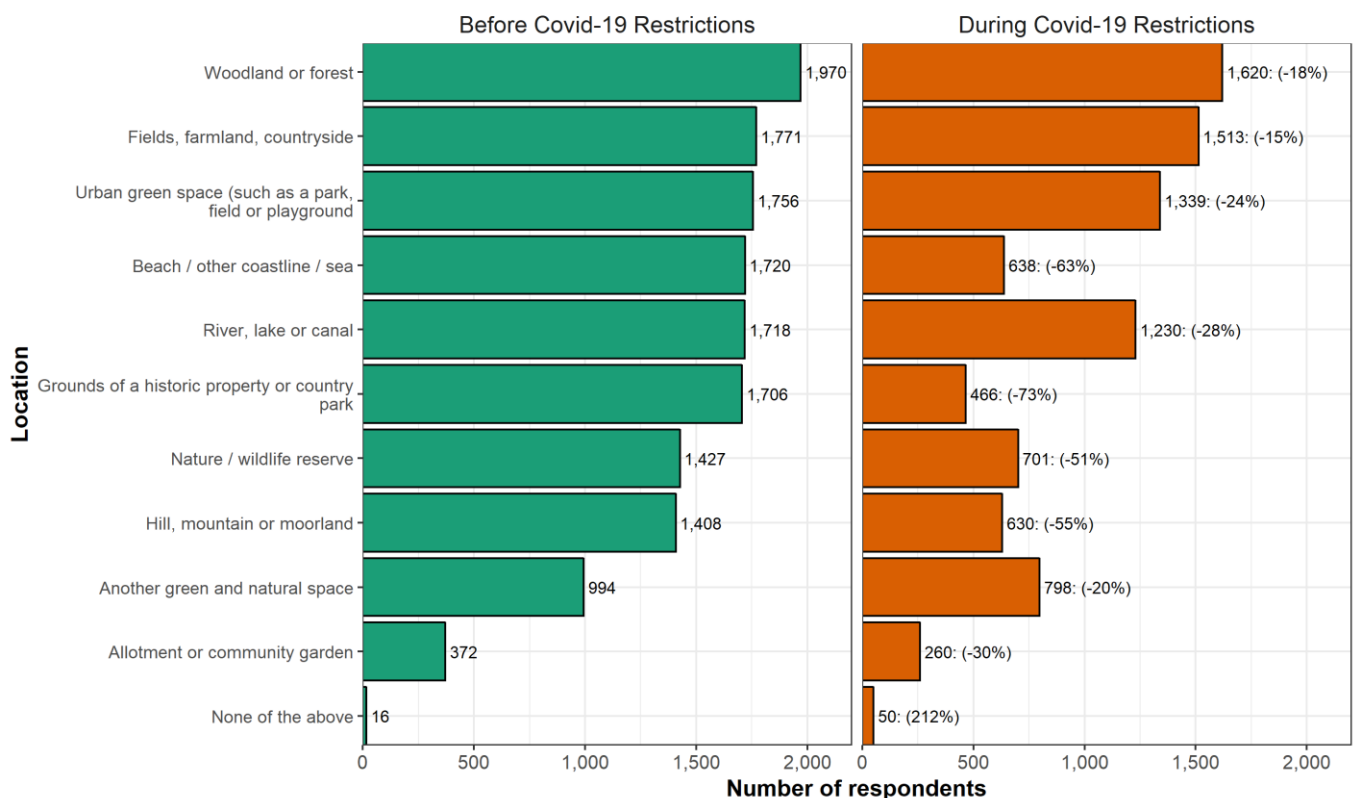


Figure 4 Visits to different natural spaces in the 12 months prior to Covid-19 restrictions (Pre Covid-19) and visits following the restrictions put in place on March 23rd 2020 (During Covid-19, up to ~4 month period). Total number of respondents = 2,115; percentages show change between two time periods (**note:** not directly comparable due to different time frames).

In terms of frequency of visits to woods and forests there was a positive shift in the number of weekly visits during the Covid-19 restrictions, with the change being significantly greater for women than for men.

More than 80% of respondents reported spending more time in their garden (Figure 5). On balance all of the activities listed showed more increases than decreases. The highest proportion of decreases were for time spent in a local wood/forests with 29% reporting a decrease in time versus 49% reporting an increase.

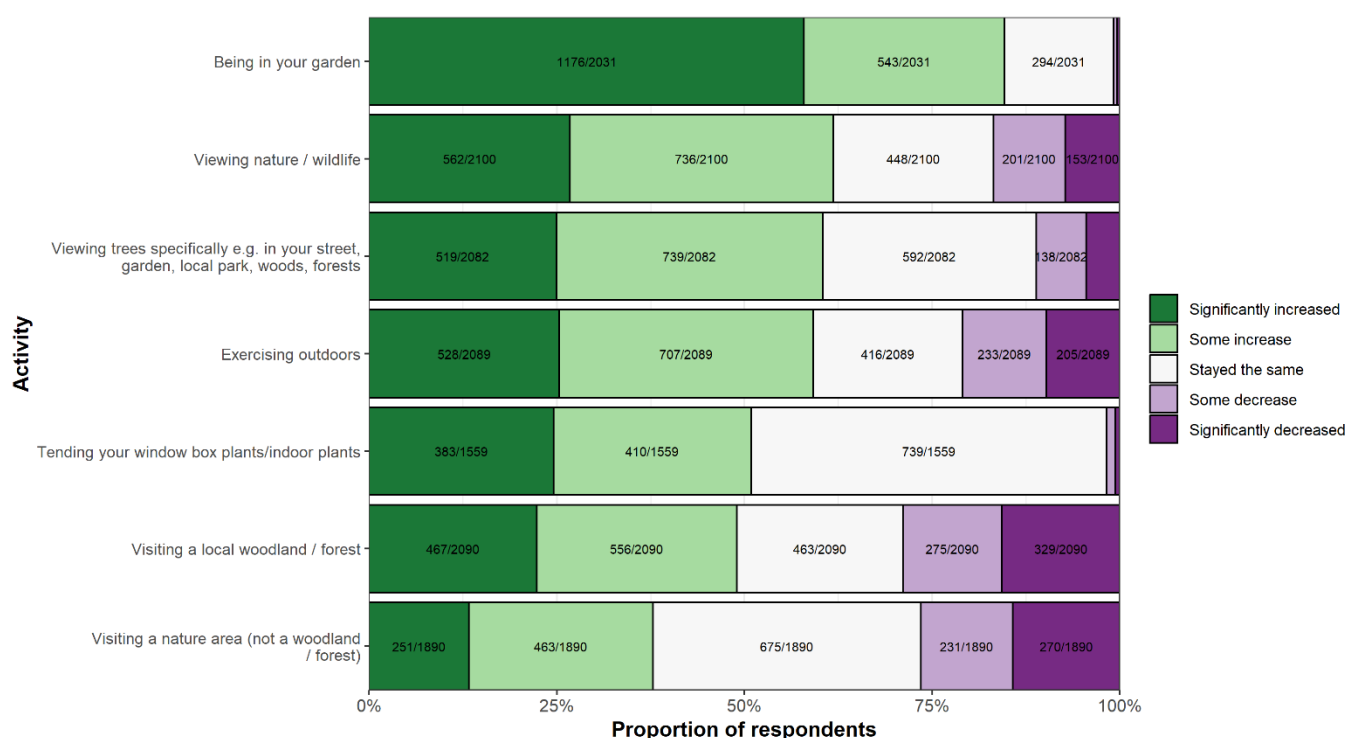


Figure 5 Whether the amount of time spent on any of the following changed during Covid-19. Total number of respondents = 2,115.

Feelings of connection to nature

There was an increase in nature connections across all three sub-questions (Figure 6), with more than two-thirds of people reporting an increase in 'time taken to appreciate nature', 'level of happiness when in nature' and 'feeling of connection to nature'.

Individuals who had increased their physical activity during Covid-19 were significantly more likely to report an increase in 'feeling of connection to nature' than other groups.

Females were significantly more likely to report an increase in 'nature connection' than males.

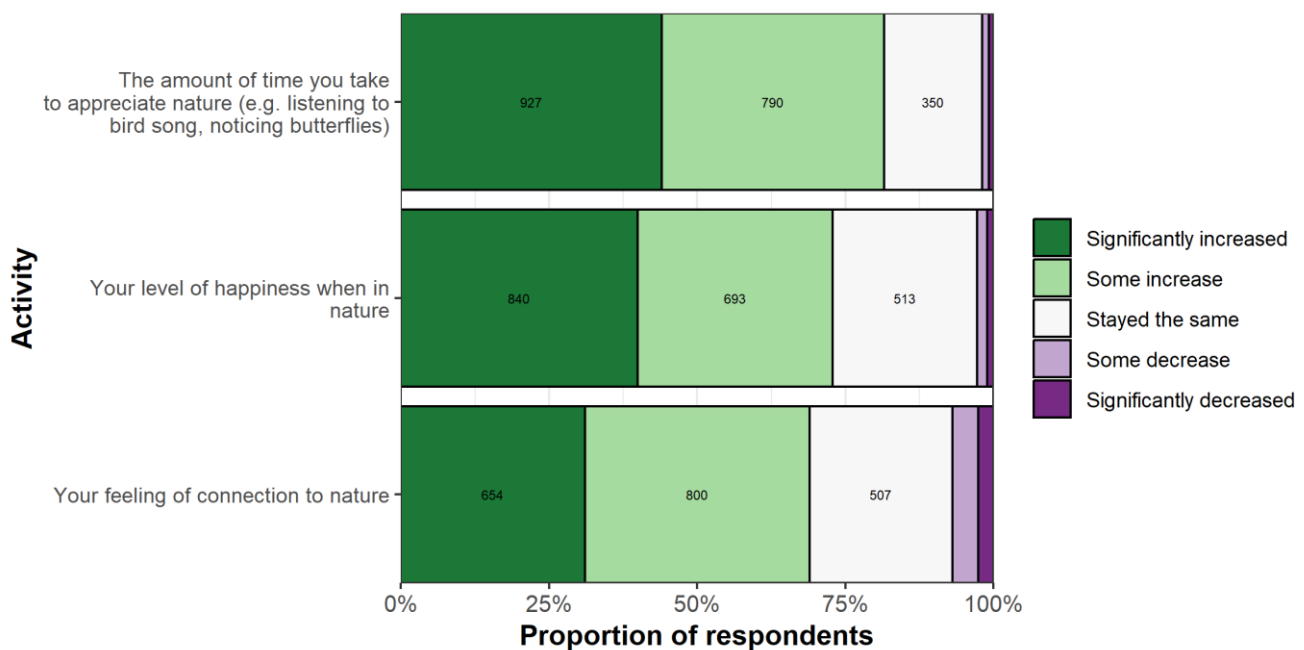


Figure 6 Feelings of connection to nature, following the restrictions put in place due to Covid-19. Total number of respondents = 2,115.

Appreciation for not only woodlands but also trees in parks, gardens and on the street increased. More than 50% of respondents reported a significant increase or some increase of appreciation across all the categories in Figure 7. Women were significantly more likely to report an increase in appreciation of trees and woods than men. Those in urban locations were significantly more likely to report an increase in appreciation of trees in their local park than rural respondents.

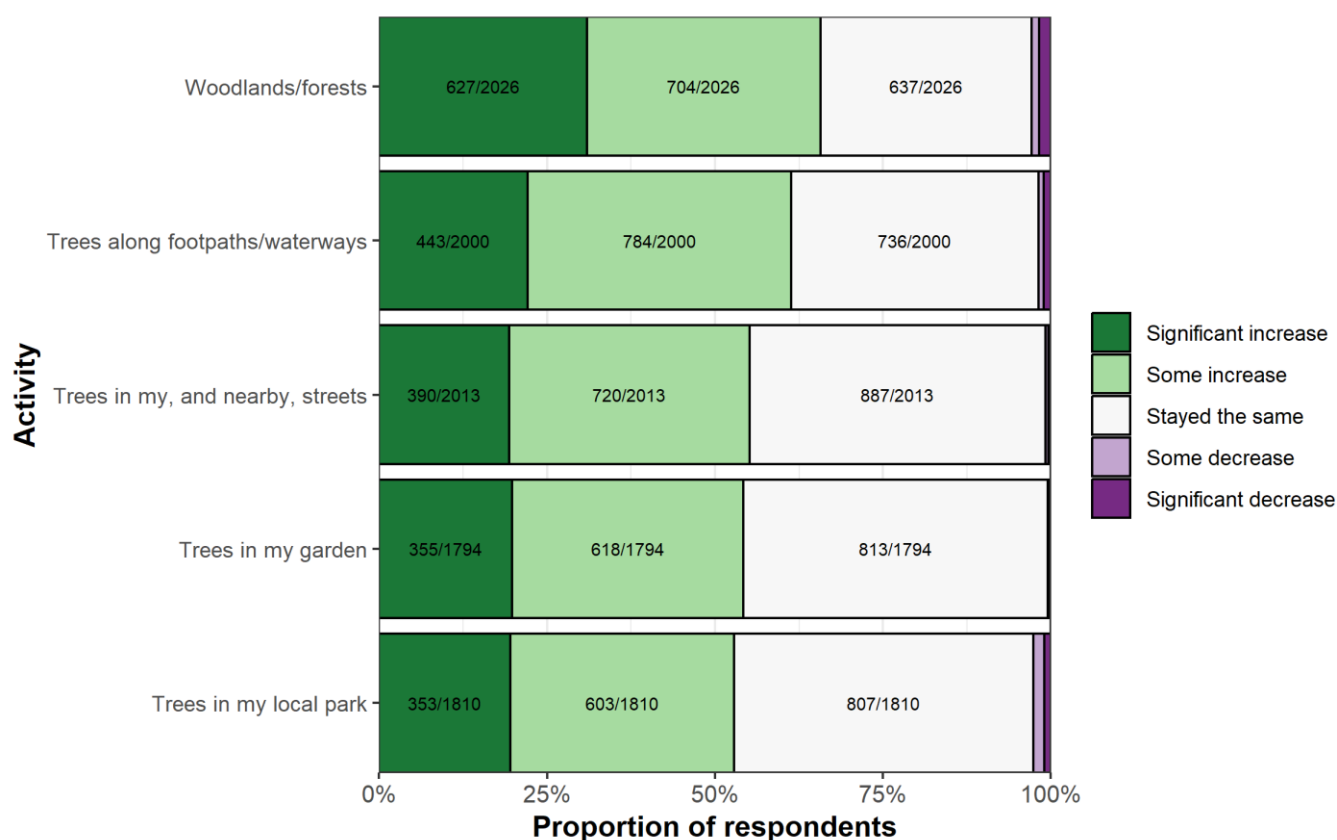


Figure 7 Changes in appreciation of treescapes since Covid-19. Total number of respondents = 2,115.

Changes in motivations and wellbeing benefits

There was a varied list of motivations reported for visiting nature during Covid-19 restrictions, with 12 out of 14 motivations being reported as a significant increase or some increase by more than 50% of respondents (Figure 8).

'Taking children out', 'extra time as schools were closed', 'exercise', 'mental' and 'physical' wellbeing all scored highly.

Younger people were significantly more motivated to visit nature for 'mental' health and wellbeing benefits, 'exercise', 'exploration' and to 'take a break from work or electronic devices' than older people. Individuals who were more active during Covid-19 restrictions were significantly more motivated to visit nature, not just for 'exercise' but for a range of other benefits including 'exploration', 'connecting with nature' and to 'learn something new/challenge themselves'.

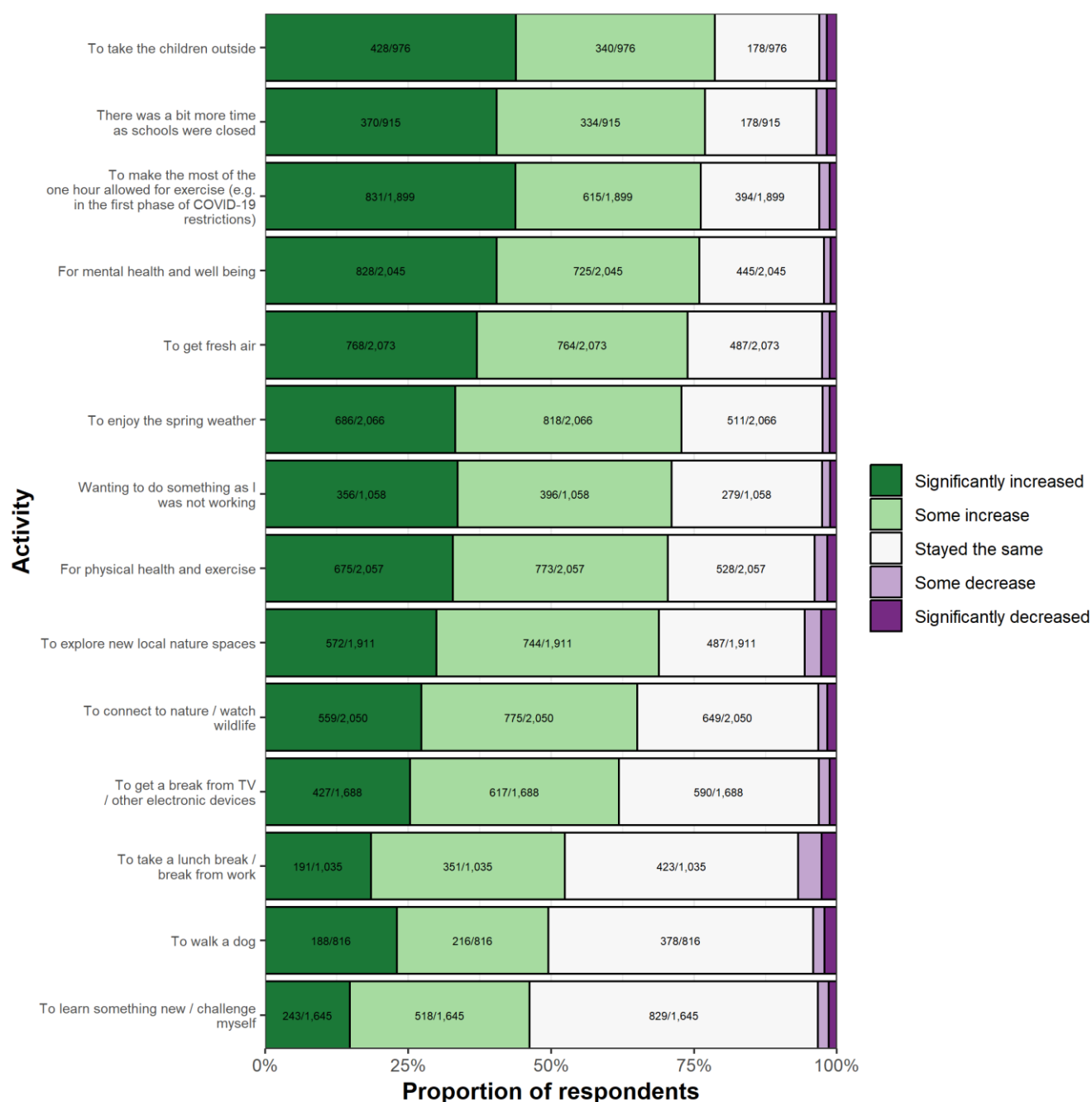


Figure 8 Changes in motivations for visiting nature, following the restrictions put in place due to Covid-19.

There was a varied list of positive benefits reported for engaging with nature during Covid-19 restrictions, with 8 out of 10 benefits being reported as having significantly increased or having some increase by more than 50% of respondents (Figure 9).

Younger people were significantly more likely to report a range of positive effects of engagement with nature versus older respondents. Females were significantly more likely to report a range of positive effects of engagement with nature versus males.

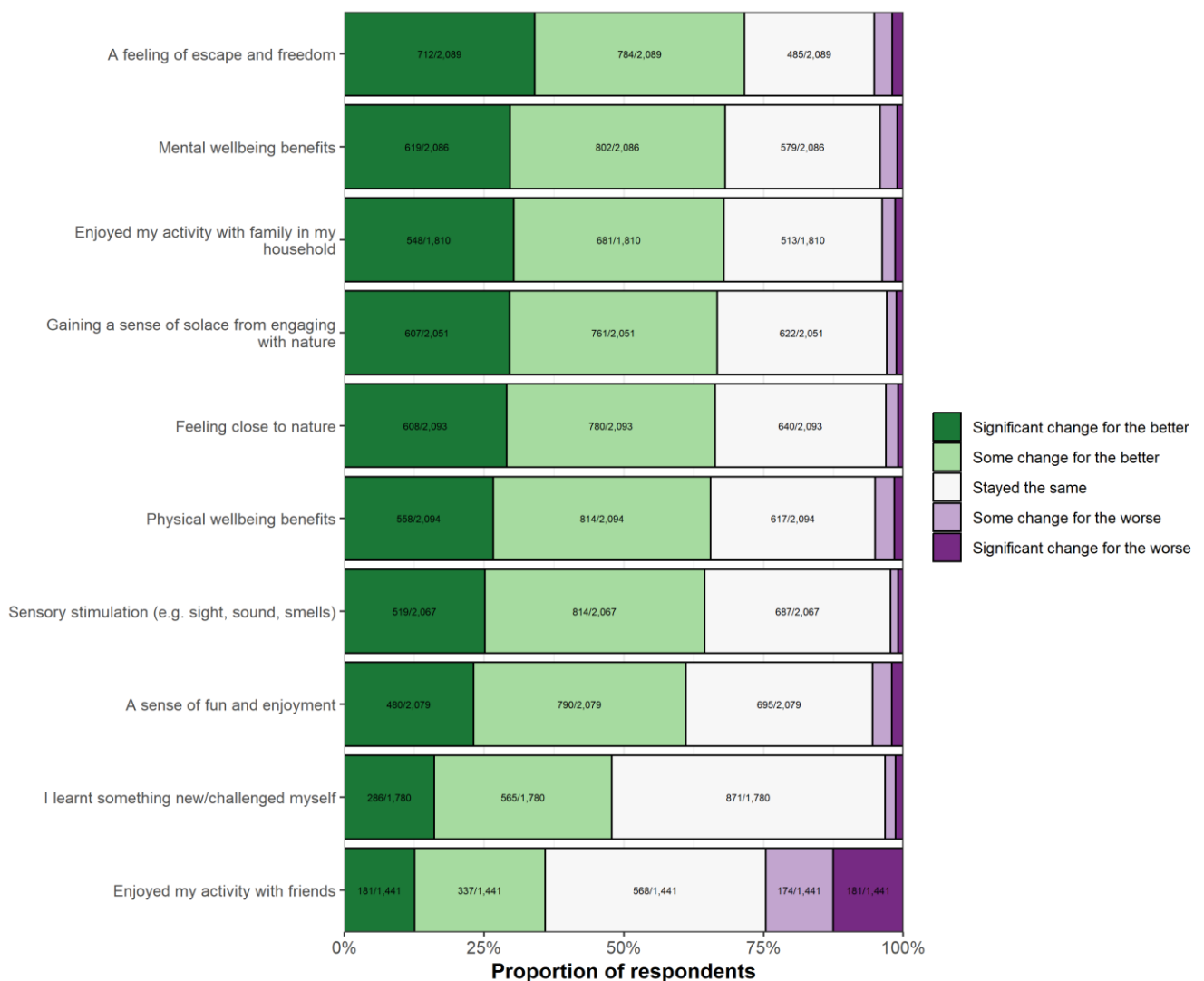


Figure 9 Changes in the benefits of engagement with nature, following the restrictions put in place due to Covid-19.

Changes in physical activity

Individuals who were originally very physically active pre Covid-19 tended to increase their activity once restrictions were introduced ; individuals who were originally inactive pre Covid-19 tended to decrease their activity once restrictions were introduced (Figure 10).

Just under 75% of individuals who stated that they had significantly or somewhat increased their exercise outdoors indicated that they would definitely sustain activity changes in the long-term (Figure 11). Joining those individuals who responded, 'Yes definitely and 'Yes a bit', 85% of people stated that they were likely to sustain these changes in physical activity.

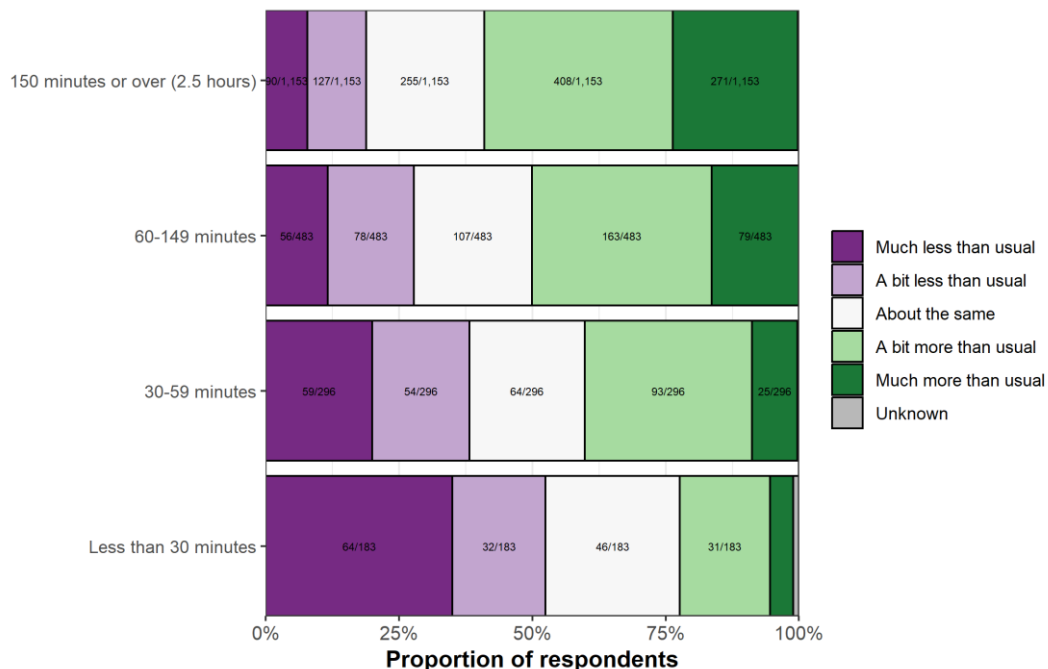


Figure 10 Levels of physical activity in the previous 7 days and whether this was more or less than people usual during Covid-19.

The Sport England Short Active Lives questions were used in the survey. On average, individuals walked on 5 out of 7 days per week for 1 hr 12 mins per walk (Figure 12 and Figure 13). Nearly three quarters of individuals reported an increase in breathing rate.

Cycling and other activities were done less frequently, less than once per week on average. Cycling activities (1.5 hours) tended to be slightly longer than walking or other activities (1 hour). Over 90% of individuals reported increased breathing rates for both cycling and other activities.

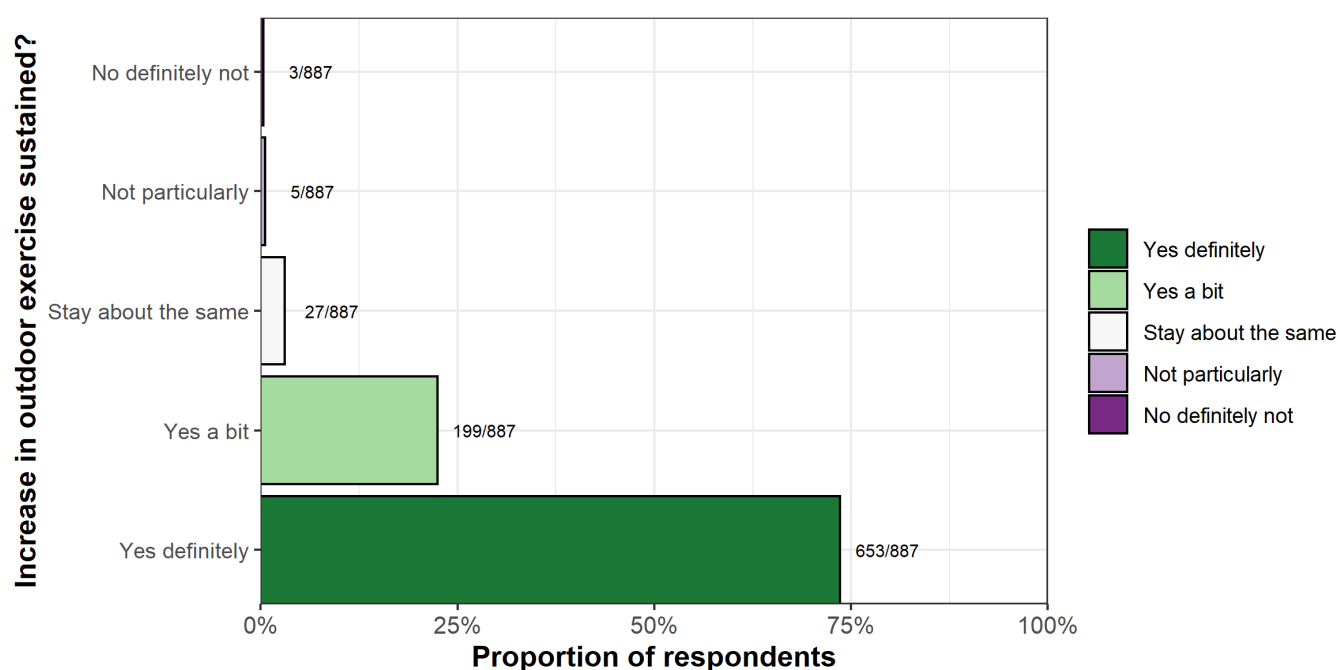


Figure 11 Likelihood of sustaining changes in physical activity (outdoor exercise)

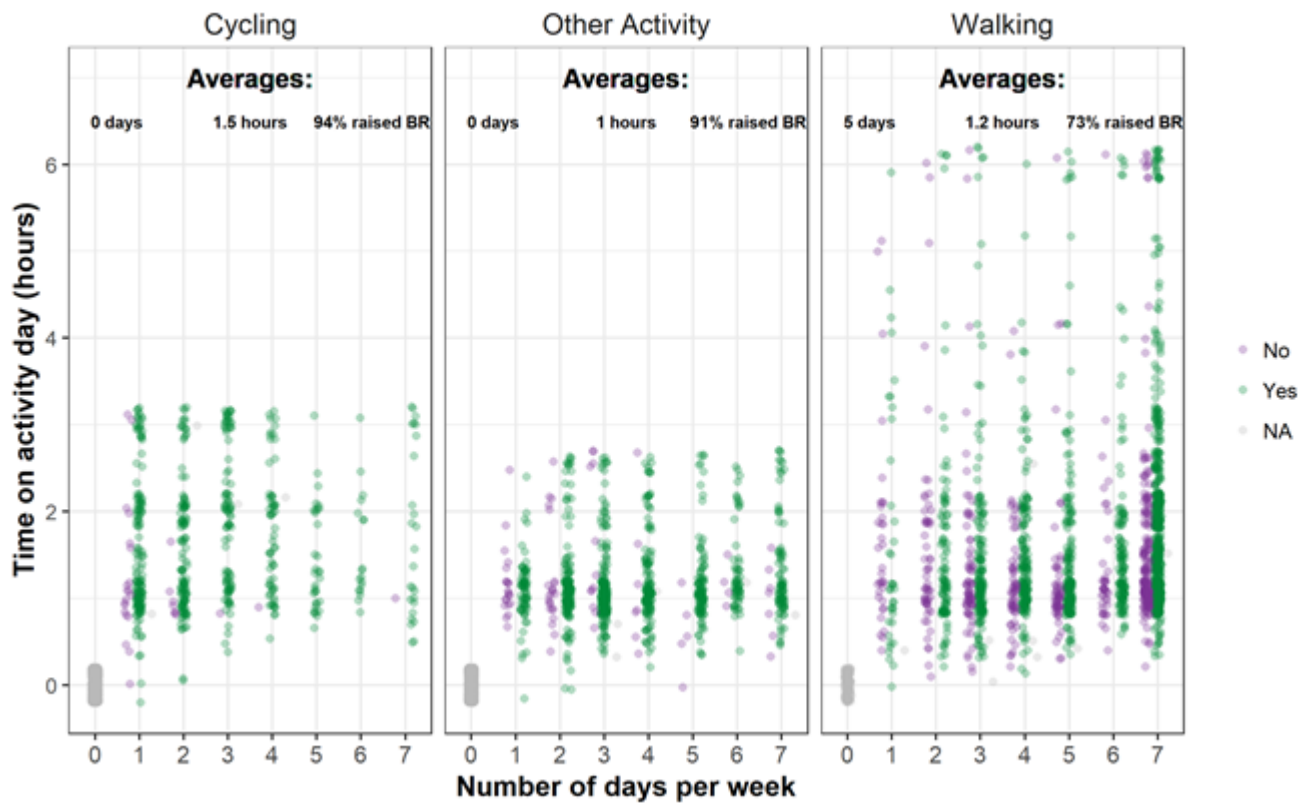


Figure 12 Amount of cycling, other activities and walking undertaken by individuals: number of days per week (x axis) and time spent doing activity (y axis). Colour represents whether activity did or did not raise heart rate. Each data point represents an individual respondent. Small amount of random variation added to each data point to better discern individual points. Averages shown at the top of each chart.

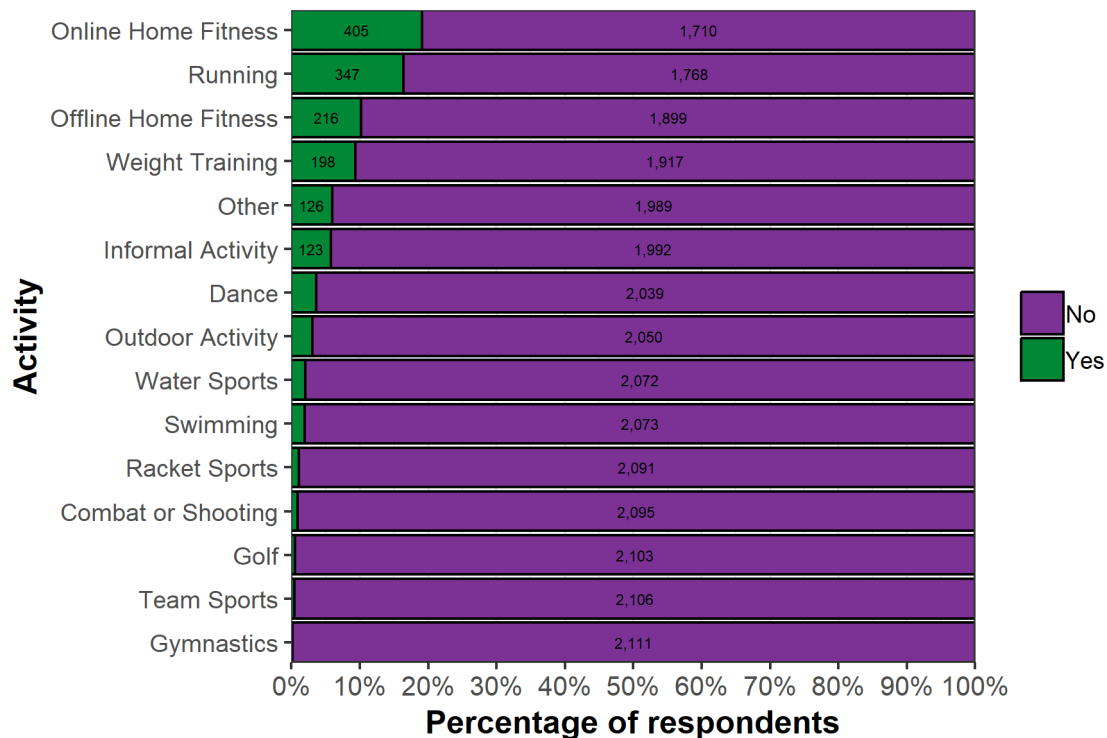


Figure 13 Other fitness activities undertaken by respondents. Total number of respondents = 2,115.

In terms of 'other fitness activities' the most popular ones undertaken in the past seven days were 'online home fitness', 'running', 'offline fitness' and 'weight training', with ~10% or more of individuals having done these activities (Figure 13).

Very few individuals took part in outdoor or team sports, with less than 5% of respondents participating in any of these activities.

What have been the barriers to engaging with nature during Covid-19 restrictions?

The key barrier reported by more than 50% of respondents was concern about overcrowding and not being able to keep their distance from others (Figure 14).

Around a third of people reported 'not being able to use facilities they need', 'not meeting people they usually would', 'current restrictions' and 'breaking restrictions' as barriers to engaging with nature.

Less than 5% of respondents reported 'having difficulty getting to accessible green spaces', 'not leaving home at all' and their 'nearest accessible green space being too far away' as a barrier.

There were significant effects for households with under-16s regarding 'not being able to use facilities they need', with significantly more respondents indicating that this was a barrier if they came from a household with children present.

Patterns by age reveal interesting results: younger people (16-34) were significantly more likely to report 'not being able to keep their distance and breaking restrictions' as barriers than older people. 'Not meeting people, they usually meet' and 'not being able to use facilities' showed a "U" shaped pattern, with younger and older individuals significantly more likely to report these as barriers than middle-aged individuals.

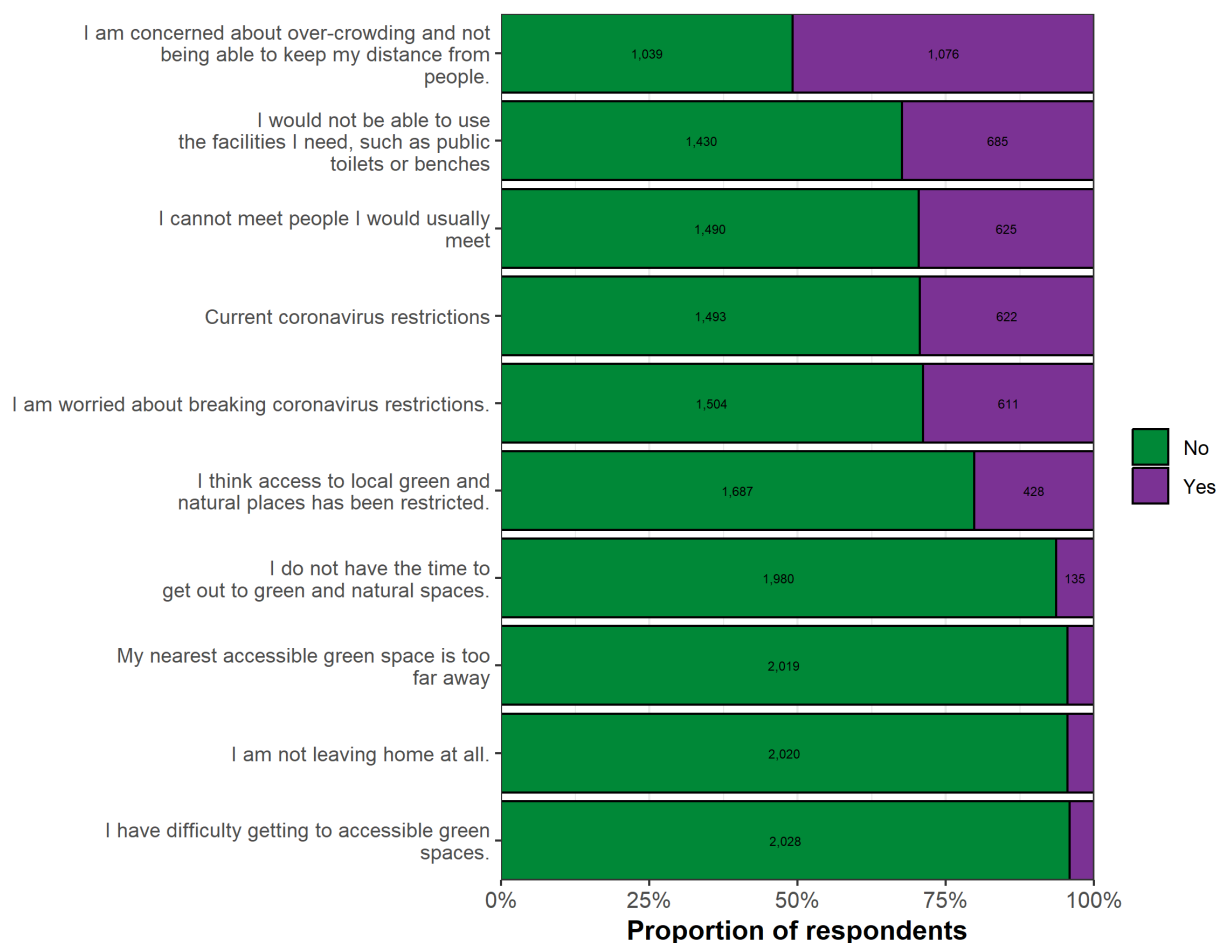


Figure 14 Barriers to engaging with nature following the restrictions put in place on March 23rd 2020 (during Covid-19 restrictions). Total number of respondents = 2,115.

Overall wellbeing

The Office for National Statistics four personal wellbeing questions were asked which cover: overall 'life satisfaction', feelings of 'happiness' and 'anxiety' on the previous day, and whether people feel that the things they do in life are 'worthwhile' (ONS, 2018). We added two further questions to ask people to reflect back on how happy or anxious they felt before the Covid-19 restrictions began (Figure 15).

When people reflected on happiness before Covid-19 and during Covid-19 restrictions there was a shift towards individuals being less happy now, with 41% of

individuals reporting lower happiness scores, 25% reporting the same and 34% reporting higher happiness scores.

Similarly, when people reflected back on 'anxiety' before Covid-19 and during Covid-19 there was a shift towards individuals being more anxious now, with 40% of individuals reporting higher anxiety scores, 31% reporting the same and 29% reporting lower anxiety scores.

Older (55+) respondents showed a significant decline in 'happiness' versus younger (16-34) respondents. Accounting for all significant effects, there was no overall decline in happiness in individuals aged under 55.

Individuals who were doing more or the same physical activity during Covid-19 restrictions showed no significant change in 'happiness' levels. Individuals doing much less physical activity than usual showed a small but significant decline in 'happiness' versus the same or more active groups.

Individuals who were doing more or the same activity during Covid-19 showed no significant change in 'anxiety' levels. Individuals doing much less activity than usual showed a small but significant increase in 'anxiety' versus the same or more active groups.

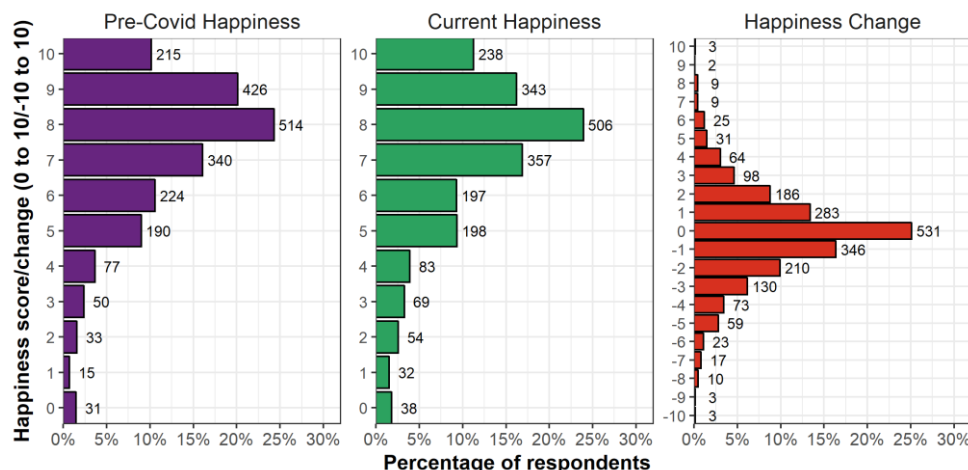
Approximately three quarters of individuals reported a 'worthwhile' score of 7 or above (Figure 15). The most frequent score was 8, accounting for just over a quarter of responses. Scores of 2 and below comprised less than 5% of all responses. The average score for 'worthwhile' for the British population in July 2020 was 7.4 (ONS 2020).

Older (65+) respondents had significantly higher 'worthwhile' scores than those under 55. Results by gender and age showed males at the extremes, with older (65+) males having the highest 'worthwhile' scores and younger males (under 55) having the lowest scores.

Individuals with more under 16s in their household had higher 'worthwhile' scores than those with fewer under 16s in their household. Individuals who were doing the same or more activity during Covid-19 showed no significant differences in feelings that the things they do are 'worthwhile'. Individuals doing much less physical activity reported significantly lower 'worthwhile' scores than all 'the same' or 'more active' groups.

The most physically active group (150 minutes or over 2.5 hours) had significantly higher 'worthwhile' scores than all other groups. The least physically active group (less than 30 minutes) had significantly lower 'worthwhile' scores than all other groups.

Approximately two thirds of individuals reported a 'life satisfaction' score of 7 or above (Figure 15). The most frequent score was 8, accounting for over a quarter of responses. Scores of 2 and below comprised of less than 5% of responses. The average score for 'life satisfaction' for the British population in July 2020 was 7 (ONS 2020).



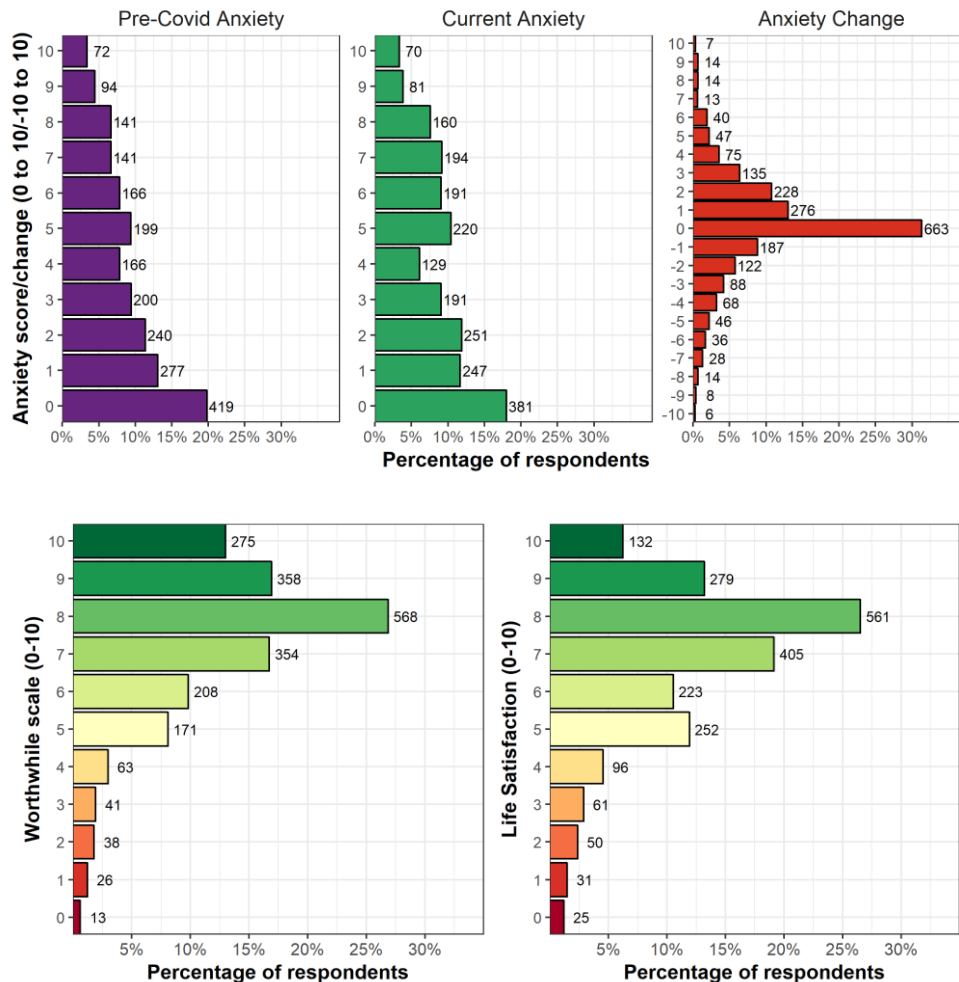


Figure 15 Data for pre-Covid-19 19 and current happiness and anxiety reported by respondents (11 point scale: 10 = most happy and most anxious respectively), plus change (21 point scale); worthwhile and satisfaction scales (11 point scale: 10 = most worthwhile and satisfied respectively) show current levels only.

16-34-year olds had significantly lower 'life satisfaction' than older (65+) respondents. Urban respondents had significantly lower life satisfaction than rural respondents.

Individuals who were doing the same or more activity during Covid-19 showed no significant differences in 'life satisfaction'. Individuals doing a bit less were significantly less satisfied than the 'same' or 'more active' groups. Individuals doing much less were significantly less satisfied than all other groups.

The most physically active group (150 minutes or over 2.5 hours) had significantly higher 'life satisfaction' than all other groups. The least physically active group (less than 30 minutes) had significantly lower 'life satisfaction' than all other groups.

4 Discussion and conclusions

Visits to 'woodlands/forests', 'fields/farmlands/countryside' were more resilient to Covid-19 restrictions and dropped by a smaller percentage than visits to 'beaches/coastline', 'historic properties/country parks', 'nature/reserves', 'hills/mountains/moorland'. This may be due to a number of factors: many historic properties were closed during the first wave of Covid-19 restrictions, and survey respondents' home locations would have impacted on the places they could visit particularly when car use was discouraged or the 5 mile distance restriction was in place (i.e. people were asked not to drive more than 5 miles for a period of time). Respondents with under-16s in their households significantly reduced visits to urban greenspaces, this may be due to the barrier of facilities not being available that those people felt they needed with young children, and, or concerns about overcrowding and not being able to socially distance in potentially crowded spaces. This was not the case in terms of their visits to woodlands which showed more resilience. The results also show a positive shift in visits to woods on a weekly basis (i.e. a shift to more frequent visits), but on the other hand less time spent in woods overall. Again, this may be due to a range of factors including the initial 1 hour lockdown which meant some people spent less time going to the woods than usual, it might also be related to location, and a desire for shorter more frequent trips for some to stay connected to nature.

Many respondents felt that changes they had made to their levels of physical activity they would try to sustain once restrictions were reduced or lifted.

Forestry England as well as other environment sector bodies were able to actively engage with people and families both working, schooling from home or shielding by providing ideas of activities that people could undertake indoors and outdoors in

their local greenspaces wherever they were. Forestry England also focused on mindfulness activities that could be undertaken at home but linked to virtual forest sights and sounds as one way of contributing to stress reduction. The responses to the survey illustrate the important role of nature, trees and woods during the Covid-19 restrictions providing many people with a chance to maintain or improve their wellbeing from appreciating trees and nature, feeling connected to nature and accessing nature. The restrictions also provided people with an opportunity to reflect on their relationship with nature, trees and woods and how they value these spaces.

The Covid-19 pandemic has highlighted a range of inequalities across society. In terms of nature it has illustrated that specific groups within society have less access to good quality natural spaces in proximity to where they live. The All-Party Parliamentary report (2020) highlights these reflections across wider society and shows a strong desire for fairer and greener ways of living.

5 References

All Party Parliamentary Party on the Green New Deal. 2020. Time to reset: the public desire for a fairer, greener Britain after Covid-19. All Party Parliamentary Party on the Green New Deal.

Derks, J., Giessen, L., Winkel, G. 2020. Covid-19 induced visitor boom reveals the importance of forests as critical infrastructure.

Facebook. 2020. Facebook pages for Forestry England, July 2020.

Natural England. 2020. People and nature survey for England.

<https://www.gov.uk/government/publications/the-people-and-nature-survey-for-england-adult-data-y1q1-april-june-2020-experimental-statistics/the-people-and-nature-survey-for-england-adult-data-y1q1-april-june-2020-experimental-statistics>

Office for National Statistics. 2018. Personal wellbeing user guidance.

<https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/methodologies/personalwellbeingsurveyuserguide>

Olsen, J., Mitchell, R. 2020. Change in use of green and open space following Covid-19 lockdown stay at home phase and initial easing of lockdown. MRC (Medical Research Council)/CSO Social and Public Health Sciences Unit, Glasgow.

ONS. 2020. Total population estimates on personal and economic wellbeing overtime.

<https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/datasets/totalpopulationestimatesonpersonalandeconomicwellbeingacrosstime>

Public Health England. 2020. Improving access to greenspace: a new review for 2020. Public Health England, London.

Ramblers (2020) The grass isn't greener for everyone: why access to green space matters. Ramblers, London.

Royal Society for the Protection of Birds. 2020. Recovering together: a report of public opinion on the role and importance of nature during and in our recovery from Coronavirus crisis in England. RSPB, Sandy.

Sport England. 2020. Active Lives Adult Survey Mid-March to Mid-May 2020: Coronavirus (Covid-19) Report. Sport England, 2020.

Appendix 1

The survey: introduction and questions. Note: a red Asterix means the question was compulsory.

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We want to explore whether your engagement with nature (and in some cases specifically trees/woods/forests) has changed or not during the period of Coronavirus (COVID-19) restrictions. During this period individuals have been permitted to spend time outdoors for exercise and more recently for relaxation. For some people this will have been an opportunity to have more contact with nature, and especially local nature, while for others the restrictions may have presented barriers to getting outdoors and experiencing nature. This survey is also interested in looking at behaviours to physical activity. It will look at the amount of

activity you currently do and whether your activity levels have changed.

We understand that due to the impact of the COVID-19 19, this period may be difficult for you and your family. Participation in this survey is purely voluntary, and if you chose to take part your time is very much appreciated.

We are interested in asking you to reflect on what you were doing:

1) **Before the COVID-19 restrictions came into place on 23rd March 2020.**

2) **Since the COVID-19 restrictions came into place.** In England for example, at first this meant people could only go outdoors to exercise for up to one hour a day and only with people from the same household. In mid-May this changed and people were allowed to go outdoors for exercise and relaxation as many times a day as they needed and people were also allowed to drive any distance. From June 1st people have been able to meet in a group of up to 6 people while still maintaining social distancing.

As a thank you, all completed surveys will be entered into a **Prize Draw** to win one of three Forestry England membership prizes for a forest of your choice which provides free entry and parking for a year plus other benefits. Runners up can win one of four £25 Go Outdoor vouchers. The survey will take about 15-20 minutes to complete. Most of the questions are multiple choice. Forestry England takes the protection of your personal information seriously. We will only process information you share for the purposes of the survey. We will not share your personal details with any third party. The information you provide will be treated, stored and analysed in line with the requirements of the Data Protection Act 2018.

The survey is voluntary. Please click the "next page" button to give your consent and start the survey.

If you have any queries about this survey then please contact Liz.obrien@forestresearch.gov.uk

Thank you for your help

2. Engagement with nature

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1. Which of the following type(s) of green and natural spaces have you visited before and since the Coronavirus (COVID-19) restrictions came into place

Please select all types of places visited for each column

	Visits made in the twelve months before COVID-19 restrictions began	Visits since COVID-19 restrictions came into place on March 23rd 2020
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		
River, lake or canal		

Visits made in the twelve months before COVID-19 restrictions began Visits since COVID-19 restrictions came into place on March 23rd 2020

Hill, mountain or moorland
Beach / other coastline / sea
Nature / wildlife reserve
Fields, farmland, countryside
Another green and natural space
None of the above

3. Time engaging with nature

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* 2. Has the amount of time you have spent on any of the following changed due to the COVID-19 restrictions?

	Significantly increased	Some increase	Stayed the same	Some decrease	Significantly decreased	Not applicable
Exercising outdoors						
Viewing nature / wildlife						
Viewing trees specifically e.g. in your street, garden, local park, woods, forests						
Visiting a local woodland / forest						
Being in your garden						
Tending your window box plants/indoor plants						
Visiting a nature area (not a woodland / forest)						

* 3. How likely are you to continue with any of the above changes in the long-term?

- ☐ Yes definitely
☐ Yes a bit
☐ Stay about the same
☐ Not particularly
☐ No definitely not
☐ Not applicable

4. Engagement with nature

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* 4. To what extent has the following changed or not due to the COVID-19 restrictions?

	Significantly increased	Some increase	Stayed the same	Some decrease	Significantly decreased	Not applicable
Your feeling of connection to nature						
Your level of happiness when in nature						
The amount of time you take to appreciate nature (e.g. listening to bird song, noticing butterflies)						

5. Visits to woodlands

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5. On average how often have you visited woodlands or forests for any reason?

Select one option in each column only

	Visits made in the twelve months before COVID-19 restrictions began	Since the COVID-19 restrictions have been in place
Everyday		
4-6 times a week		
1-3 times a week		
1-3 times a month		
4-6 times a year		
1-3 times a year		
Less than 1-2 times per year		
Not applicable		

6. Have you accessed a Forestry England public forest?

Select one option in each column only

	I have accessed a Forestry England public forest in the 12 months before the COVID-19 restrictions began	I have accessed a Forestry England public forest since the COVID-19 restrictions began
Yes		
No		
Not sure		

6. Engagement with trees

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* 7. Has your appreciation of the following changed since the Coronavirus (COVID-19) restrictions came into place?

	Significant increase	Some increase	Stayed the same	Some decrease	Significant decrease	Not applicable
Trees in my garden						
Trees in my, and nearby, streets						
Trees in my local park						
Trees along footpaths/waterways						
Woodlands/forests						

If your appreciation changed please can you describe how and why?

7. Motivations

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* 8. Have any of the following motivations for you visiting nature changed because of COVID-19 restrictions began?

	Significantly increased	Some increase	Stayed the same	Some decrease	Significantly decreased	This is not a motivation for me	Not applicable
For mental health and well being							
To get fresh air							
Wanting to do something as I was not working							
To make the most of the one hour allowed for exercise (e.g. in the first phase of COVID-19 restrictions)							
To walk a dog							
To connect to nature / watch wildlife							

	Significantly increased	Some increase	Stayed the same	Some decrease	Significantly decreased	This is not a motivation applicable for me
To take the children outside						
To get a break from TV / other electronic devices						
To learn something new / challenge myself						
There was a bit more time as schools were closed						
To take a lunch break / break from work						
To enjoy the spring weather						
To explore new local nature spaces						
For physical health and exercise						

8. Wellbeing benefits

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* 9. Have any of the following changed from your engagement with nature since the COVID-19 restrictions?

	Significant change for the better	Some change for the better	Stayed the same	Some change for the worse	Significant change for the worse	Not applicable
Mental wellbeing benefits						
A sense of fun and enjoyment						
I learnt something new/challenged myself						
Gaining a sense of solace from engaging with nature						
Enjoyed my activity with friends						
Sensory stimulation (e.g. sight, sound, smells)						

	Significant change for the better	Some change for the better	Stayed the same	Some change for the worse	Significant change for the worse	Not applicable
Enjoyed my activity with family in my household						
Feeling close to nature						
A feeling of escape and freedom						
Physical wellbeing benefits						

9. Barriers to accessing nature

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10. Thinking about the time since COVID-19 restrictions were introduced have any of the following reasons prevented you spending time outside in green and natural spaces?

Please select all that apply

These reasons prevent me spending time outside

I am not leaving home at all.

I am concerned about over-crowding and not being able to keep my distance from people.

My nearest accessible green space is too far away

I do not have the time to get out to green and natural spaces.

I cannot meet people I would usually meet

I would not be able to use the facilities I need, such as public toilets or benches

I have difficulty getting to accessible green spaces.

Current coronavirus restrictions

I am worried about breaking coronavirus restrictions.

I think access to local green and natural places has been restricted.

10. Amount of physical activity

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* 11. What is the total amount of moderate to vigorous physical activity that you have undertaken in the last seven days?

By physical activity we mean bouts of 10 minutes or more - as part of work, home work (DIY, gardening) active travel or leisure activity.

By moderate activity we mean activity where you raise your heart rate and feel a little out of breath.

By vigorous activity we mean you're breathing hard and fast and your heart rate has increased significantly.

- ☐ 150 minutes or over (2.5 hours)
- ☐ 60-149 minutes
- ☐ 30-59 minutes
- ☐ Less than 30 minutes

Q12

12. In the past 7 days, have you done a continuous walk lasting at least 10 minutes

- ☐ Yes
- ☐ No

11. Walking

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13. In the past 7 days on how many days did you do a walk lasting at least ten minutes

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 days

14. How much time did you usually spend walking on each day that you did the activity

Hours per day

Minutes per day

15. Was the effort you put into walking usually enough to raise your breathing rate?

- ☐ Yes
- ☐ No

12. Cycling

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16. In the past 7 days, have you done a cycle ride of at least 10 minutes?

- ☐ Yes
- ☐ No

13. Amount of cycling

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17. In the past 7 days on how many days did you do a cycle ride?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7 days

18. How much time did you usually spend cycling on each day that you did the activity?

Hours per day

Minutes per day

19. Was the effort you put into cycling usually enough to raise your breathing rate?

- ☐ Yes
- ☐ No

14. Fitness activity

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Q20

20. In the past 7 days, have you done sport, fitness activity (other than walking or cycling) or dance?
(this could be a virtual class for example)?

- ☐ Yes
- ☐ No

15. Amount of fitness activity

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21. In the past 7 days on how many days did you do a sport, fitness activity or dance?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

☐ 5

☐ 6

☐ 7 days

22. How much time did you usually spend doing sport, fitness activities or dance on each day that you did the activity

Hours per day

Minutes per day

23. Was the effort you put into doing sport, fitness activities or dance usually enough to raise your breathing rate?

☐ Yes

☐ No

* 24. What sport, fitness or dance activity have you done in the past 7 days?

Tick all that apply

☐ Gym, exercise machines, weight training, body weight exercises such as press ups, squats, core training etc. (this includes doing these activities at home)

☐ Home activity, fitness or exercise class not viewed online or on TV, DVD or video (includes yoga, pilates, circuits)

☐ Racket sports (such as tennis, badminton, squash etc.)

☐ Water sports (such as surfing, rowing, sailing etc.)

☐ Outdoor activities (such as fishing, climbing, mountaineering, orienteering etc.)

☐ Swimming

☐ Combat, martial arts or any target sports (such as shooting, archery etc.)

☐ Dance (this includes online, TV, DVD or video led dance activity)

☐ Golf

☐ Team sports (such as football, cricket, rugby etc.)

☐ Informal physical activity (an activity that was undertaken because it was fun or social e.g. playing running games with your children.)

☐ Gymnastics- (including trampolining or cheerleading)

☐ Home activity, fitness or exercise class viewed online or on TV, DVD or video (includes yoga, pilates, circuits etc.)

☐ Running or jogging

☐ Other (please specify):

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Please select one option

Activity level changes?

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0

0

30. How happy were you feeling before the COVID-19 restrictions began?

on a scale from 0 "not at all happy" to 10 "completely happy"

0

31. On a scale where 0 is "not at all anxious" and 10 is "completely anxious", overall, how anxious did you feel before the COVID-19 restrictions began?

0

19. About you

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* 32. Are you?

- ☐ Female
- ☐ Male
- ☐ Non-binary
- ☐ Prefer not to say

* 33. Which of the following options best describes your employment status at the present time?

- ☐ Employed
- ☐ Employed but currently furloughed
- ☐ Self-employed
- ☐ Unemployed
- ☐ Looking after home or family
- ☐ In education school/college/university
- ☐ Retired
- ☐ Volunteering
- ☐ Other (please specify):

* 34. Which of these ethnic groups do you consider you belong to?

- ☐ White
- ☐ Mixed / multiple ethnic group
- ☐ Black or Black British
- ☐ Asian or Asian British
- ☐ Other ethnic group

20. About you and your household

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* 35. How many in people are there in your household excluding you? (if none please state zero)

Q36

* 36. How many children in your household below 16 years of age? (if none please state zero)

* 37. Please enter your postcode. We need this understand the geographical spread of participants. Your postcode will only be used to help us understand this. Your postcode will not be shared with any third party.

21. Prizes and further research

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Q38

38. Please enter your email address to be entered into our prize draw (this is optional, but we can only allocated prizes to those who leave a contact email). Terms and conditions apply.

39. Would you be interested in taking part in a short telephone interview to explore in a bit more detail how you have engaged with green and natural spaces including woodlands and forests before and since the Coronavirus restrictions? This would take about 15 minutes of your time and would be undertaken at a time convenient to you. This approach will enable us to find out a bit more about how easy or difficult it has been to access and enjoy green and natural spaces in recent times and will help to inform future management. Please state if you would like to take part or not.

☐ Yes☐ No

Q40

40. If you agree to a short interview please provide your email address or phone number so we can contact you

[Modify Message Settings](#)

22. Thank You Page

You have completed this survey!

Thank you very much for taking the time to answer this survey. We hugely appreciate your input.

You will be directed to another webpage and can scroll down that page to see the terms and conditions of the prize draw.

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