Nature exposure and health in Adults': People and Nature Survey

July 2025

Natural England Commissioned Report NECR640

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Catalogue code: NECR640

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Keywords

Health, Wellbeing, Nature exposure, Adults' People and Nature Survey

Citation

Alice Diaz, Khin Lin, and Matthew Barnard. 2025. Nature exposure and health in Adults' People and Nature Survey. *Natural England Commissioned Report* NECR640. Natural England.

Foreword

Nature exposure and health

Natural England's (hereafter, "NE") goals include promoting people's access to green and natural spaces as well as contributing to society's wellbeing, enjoyment and prosperity. In 2023, NE's sponsor, Defra, published the Environmental Improvement Plan 2023, an update to their original 25 Year Environment Plan (25 YEP) along with a list of 66 indicators meant to measure the degree to which Defra's goals are being met. One of these indicators, "G7", is related to NE's goal on wellbeing benefits derived from people's engagement with nature.

A recent piece of research used data from the Monitor of Engagement with the Natural Environment (MENE) survey from 2014-2016 to explore the health and wellbeing benefits that people in England experienced according to the time they spent in nature (White, et al., 2019). This research used England-wide data from MENE and estimated that health benefits derived from exposure to nature are greater for those spending 120 minutes or more in nature each week all year around (reported health benefits are subjective and not independently verified in clinical terms). Moreover, this positive association between health gains and nature exposure peaked at around 200-300 minutes per week and plateaus beyond that point. Even though the authors caution the 120 minutes threshold as a starting point for further investigation, it is the most suitable threshold available.

Following NE's and Defra's goals regarding people's engagement with nature, NE is interested in using survey data to investigate the percentage of people in England who spend 120 or more minutes in nature and, hence, may be experiencing associated greater health and wellbeing benefits.

The Adult's People and Nature Survey

To track the degree to which people engage in nature and the potential benefits they gain from it, NE ran the Monitor of Engagement with the Natural Environment (MENE) survey across England from 2009 to 2019. In 2020 the People and Nature Survey (PANS) was created to substitute MENE.

PANS includes a survey specifically for adults (A-PaNS) and another for children (C-PaNS). The A-PaNS survey started running in April 2020 and, at the time of writing, monthly collection of data continues. The A-PaNS collects 2,000-2,100 responses per month, yielding around 25,000 responses a year. Note that the sample is not longitudinal, meaning, respondents are different every month. The A-PaNS includes a total of six question modules, each focusing on different aspects of people's engagement with nature. The raw data can be accessed on UK data service.

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Executive summary

Recent research findings suggest that perceived health and wellbeing benefits derived from exposure to nature are greater for those spending 120 minutes or more in nature each week all year around. This research piece used data from the Adult's People and Nature Survey (A-PaNS) to explore the proportion of English respondents who might be spending enough time in nature to receive greater health benefits. The results could feed into the "G7" indicator of Defra's 25 Year Environment Plan which relates to wellbeing benefits derived from people's engagement with nature.

Our results indicate that approximately one-third of the respondents surpassed the 120-minutes a week threshold across all years. Year 1 (April 2020-March 2021) had the highest proportion of respondents spending 120 minutes or more in nature weekly, at 33%. This was statistically significantly different to the proportions in year 2 (April 2021-March 2022) and year 3 (April 2022-March 2023), both at 32%. All years were statistically significantly different from year 4 (31%, April 2023-March 2024).

Demographic subgroups differences across years were also similar. The demographic subgroups having the highest proportion of respondents meeting the 120-minute benchmark across all years were: older respondents (aged 55+), men, White, not deprived, with "good" health and employed or retired.

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Analysis objectives

The goal of this project was two-fold. Firstly, this research aimed to assist NE and Defra analysing the A-PaNS to determine the proportion of people in England engaging with nature. Secondly, this project also explored changes between April 2020 and March 2024, as well as demographic subgroup differences related to ethnicity, gender, working status, deprivation level, health and age groups.

Chosen variables

The variables included in this research correspond to questions in Module 2 and Module 6 of A-PaNS. Due to the questionnaire design, the former is completed by 90% of the total sample and it includes questions on the main place that respondents had visited in the UK in the last 14 days (with the other 10% being missing values i.e. NA). Module 6 covers questions on demographic characteristics (e.g., gender, age, ethnicity, etc) and is asked to all respondents. For respondents who provided their postcode in Module 6, the corresponding score for the Index of Multiple Deprivation (IMD) of that postcode is used. Table 1 shows the question numbers and labels that were selected for this research.

Table 1. List of selected A-PaNS questions

Question number	Question phrasing	Answer options
Module 2		
Q6 (No_Of_Visits)	How many times, if at all, did you make this type of visit to green and natural spaces in the last 14 days?	Typed number
Q17 (M2A_Q7)	How long did this visit last altogether? *This includes the journey: it is from the time you left home or wherever you started from to when you returned*	1. Up to 30 minutes 2. Over 30 minutes and up to an hour 3. Over 1 hour and up to 2 hours 4. Over 2 hours and up to 3 hours 5. Over 3 hours and up to 5 hours 6. Over 5 hours 7. Don't know 8. Prefer not to say

Question number	Question phrasing	Answer options
Module 6		
Age bands	Derived from Q62 (Age) and Q63 (Age_band)	1. 16-24 2. 25-39 3. 40-54 4. 55-64 5. 65+ 6. Don't know 7. Prefer not to say
Q64 (Gender)	What gender do you identify as?	1. Male 2. Female 3. In another way (specify) 4. Don't know 5. Prefer not to say
Q70 (Ethnicity)	Which one of the following best describes your ethnic group or background?	1. White 2. Mixed 3. Asian or Asian British 4. Black or Black British 5. Any other ethnic group or background 6. Don't know 7. Prefer not to say
Q75 (General_Health)	Would you say that, in general, your health is…?	1. Very good 2. Good 3. Fair 4. Bad 5. Very bad 6. Don't know 7. Prefer not to say
Q68 (Work_Status)	Are you…?	1. In full-time employment (31+ hours per week) 2. In part-time employment (Up to 30 hours per week) 3. Self-employed 4. Unemployed – less than 12 months

Question number	Question phrasing	Answer options
		5. Unemployed (long term) - more than 12 months 6. Not working – retired 7. Not working – looking after house / children / other caring responsibilities 8. Not working – long term sick or disabled 9. Student - in full-time education 10. Student – in part-time education 11. Don't know 12. Prefer not to say
Index of Multiple Deprivation (IMD)	Derived from Respondent_Postcode	Postcode within England

Analysis

Data processing

Demographic variables

Four demographic variables were recoded to reorganize the original survey answer options into either, less categories, or categories with more homogeneous number of respondents (Table 1):

Table 2. Recoding of demographic variables

Variable	Recoding
Q70 (Ethnicity)	Respondents in answer option “Mixed” and “Any other” were collapsed under the “Other” code.
Q75 (General_Health)	The health variable was recoded to include three categories: “Good” (i.e. including “Very good” and “Good” categories), “Fair” (i.e. “Fair” category), “Bad” (i.e. including “Very bad” and “Bad” categories).
Q68 (Work_Status)	The work status variable was regrouped into 5 categories: “Employed” (i.e. including “full-time”, “part-time” and “self-employed”), “Unemployed” (i.e. “long-term” and “short-term” unemployed categories), “Retired” (i.e. “Retired” category), “Leave_Care/Sick” (i.e. not working due to caring responsibilities or sick leave), and “Student” (i.e. in “part-time” or “full-time” education).
IMD	IMD deciles were recoded so that Deciles 1 and 2 were coded as “Deprived” and the rest (Deciles 3 to 10) were coded as “Not Deprived”.

Across all demographic variables, the “Don’t know” or “Prefer not to say” options were collapsed into a single category, i.e. “DK/PNS”. Respondents were allowed to skip sensitive questions, which lead to larger proportion of missing values in variables like ethnicity and IMD. Over the four years of data, about 2% of respondents did not provide an answer for ethnicity, while about 19% did not provide their postcode and therefore IMD could not be derived. Numbers for each year are provided in the result sections. This might have introduced bias in the results as demographic groups might vary in their willingness to share this information.

Time and outcome variables

In order to calculate the outcome variable, which was the amount of time spent in nature per week, the research team used two time variables: number of trips to nature that respondents had made in the last 14 days (*No_Of_Visits*); and time spent on the “main place you visited in the UK in the last 14 days”, i.e. *M2A_Q7* (see Table 3.2). Before calculating the outcome, both variables had to be transformed.

In terms of the number of trips variable (*No_Of_Visits*), values had to be recoded to reflect the average number of trips per week (7 days) rather than in 14 days. The time spent variable (*M2A_Q7*) then had to be recoded from categorical answer options to numerical variables. To do this, researchers used the mid-point of each category and assigned that number of minutes to each option (Table 3).

Table 3. Recoding of time variables

Variable	Recoding
Q6 (No_Of_Visits) How many times, if at all, did you make this type of visit to green and natural spaces in the last 14 days?	Numeric responses up to 14 trips were divided by two to obtain the total number of visits per week. Numeric responses over 14 trips were inputted with 7 as the total number of visits per week.
Q17 (M2A_Q7) How long did this visit last altogether? *This includes the journey: it is from the time you left home or wherever you started from to when you returned*	"Up to 30 minutes" = 15 minutes "Over 30 minutes and up to an hour" = 45 minutes "Over 1 hour and up to 2 hours" = 90 minutes "Over 2 hours and up to 3 hours" = 150 minutes "Over 3 hours and up to 5 hours" = 240 minutes "Over 5 hours" = 360 minutes (assuming between 5 and 7 hours)

Having transformed the *No_Of_Visits* and *M2A_Q7* variables, researchers were able to compute the outcome variable. For this, researchers multiplied respondents' weekly number of trips by the time spent during the main trip. Finally, a threshold variable with two categories was created to reflect whether people spent "equal or over 120 minutes" or "under 120 minutes" in nature every week.

In performing the transformations to calculate the outcome variable, it is important to note, as with demographic characteristics, the "Don't know" or "Prefer not to say" options were collapsed into a single category, i.e. "DK/PNS". Due to questionnaire design, Module 2 questions are not asked to 10% of the sample so both time variables contained missing values (i.e. "Not asked"). In addition, respondents who answered that they had not been in nature in the last 14 days at *No_Of_Visits*, were not asked the follow up questions on their main trip (i.e. *M2A_Q7*). Consequently, there were a number of respondents who have missing values in *M2A_Q7,* lowering the effective sample size. For researchers to use the full subsample of participants that completed Module 2 questions as the base for calculating percentages, the research team recovered those 'excluded' participants by inputting zeros in *M2A_Q7* for all respondents who had a zero in *No_Of_Visits* and a missing value in *M2A_Q7*.

In the results section below, the percentage of respondents within each demographic subgroup who weekly spent 120 minutes or more in nature was calculated independently for each demographic subgroup. For instance, in the case of gender, the percentage of women who weekly spent 120 minutes or more in nature was calculated using the total number of women rather than the sum of the total number of women and men. Similarly, the percentage of men that weekly spent 120 minutes or more in nature was calculated using the total number of men. As such, the percentages of subgroups are not cumulative

and should not add up to 100%. As for the total population, proportions were calculated after excluding missing responses (i.e. “Not asked”) in the outcome variable; meaning, results show the percentage of respondents in each demographic subgroup that (1) spent 120 minutes or more in nature, (2) spent less than 120 minutes in nature or (3) answered “Don’t know/Prefer not to say”.

Weighting

The *“Weight_Percent”* weight, rather than the *“Weight_percent_M2A”*, was applied to estimate percentages in the main sample and across each of the demographic groups. This weight was chosen because it is adequate for all survey modules and our analysis involved questions from different modules. Moreover, as the technical report states that: *“[t]o reduce bias, the variables included in the* [Weight_percent_M2A] *weighting need to be correlated with the key survey outcome – the number of visits made to green and natural spaces in the last 14 days”*, there is a possibility that *Weight_percent_M2A* could constrain the demographic group differences this project was aiming to explore.

Statistical significance testing

Statistical significance testing helps researchers determine whether the differences observed between groups are large enough to indicate that they would have been very unlikely to have occurred by chance. For this research, we used z-test for proportions to perform pair-wise comparisons across groups and a significance threshold of 0.05, meaning that we consider a difference statistically significant if there is at least 95% confidence that the observed differences are not attributable to chance. To apply a z-test, each group must include at least thirty respondents. Consequently, no significance testing was conducted on groups with fewer respondents. Statistically significant differences have been represented using lower case letters to reflect the specific pair-wise comparisons that are different.

Survey results

Results from April 2020 to March 2021

Population level results

This section outlines the weighted percentage of respondents in the sample who spent more or less than 120 minutes in nature every week from April 2020 to March 2021. The results showed that approximately one-third (33%) of respondents spent 120 minutes or more a week in nature, whereas over half of the respondents (58%) spent less than that (Table 4). The remaining 9% represents the individuals who chose either “Don’t know” or “Prefer not to say” (i.e. DK/PNS) when asked about the number of trips or time they spent in nature. Confidence intervals were calculated at a 95% confidence level for the weighted percentage of respondents of each category.

Table 4. Proportion of weekly time spent in nature (April 2020 - March 2021)

Total Time Spent a Week in Nature	Unweighted Base	Weighted Proportion	Confidence Interval Lower limit	Confidence Interval Upper Limit
Equal or over 120 minutes	7,543	33%	32%	34%
Less than 120 minutes	12,771	58%	57%	58%
DK/PNS	2,149	9%	9%	10%
Not asked	2,531	-	-	-
Total	24,994	-	-	-

Source: A-PaNS

Differences between demographic groups of interest

This section outlines the differences across the demographic subgroups of interest (i.e., age, gender, ethnicity, health, and employment status). The results present the weighted proportions for each of the three categories: those who spent 120 minutes or more in nature weekly, those who spent less than 120 minutes, and those answered either “Don’t know” or “Prefer not to say” (i.e. DK/PNS). Confidence intervals were calculated at a 95% confidence level for the percentage of respondents spending 120 minutes or more in nature.

Differences in time spent in nature according to age

The results showed that there were statistically significant differences in the proportion of respondents spending 120 minutes or more in nature weekly across age groups (Table 5). Respondents aged 55-64 had the highest proportion (37%) meeting the 120-minute threshold, significantly higher than the younger age brackets of 16-24 (31%) and 25-39

(31%). Respondents aged 40-54 had the second highest proportion at 34%, followed by those aged 65+ (32%). However, no significant differences were found between aged 65+ and the young age groups (i.e. 16-24 and 25-39) on the proportion of people spending 120 minutes or more in nature weekly.

It is also noteworthy that younger respondents (16-24 and 25-39) had significantly higher "DK/PNS" responses (18% and 13% respectively), suggesting they were less likely to specify their time spent in nature or the number of visits.

Table 5. Proportion of weekly time spent in nature by age bands (April 2020 – March 2021)

Age Bands	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
16-24 (a)	3,223	31% c,d	50% b,c,d,e	18% b,c,d,e	29%	33%
25-39 (b)	6,176	31% c,d	56% a,c,e	13% a,c,d,e	30%	33%
40-54 (c)	6,189	34% a,b,d,e	58% a,b,e	8% a,b,d,e	32%	35%
55-64 (d)	3,737	37% a,b,c,e	56% a,e	7% a,b,c,e	35%	39%
65+ (e)	5,669	32% c,d	65% a,b,c,d	3% a,b,c,d	30%	34%
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to gender

The results showed that differences in the proportion of people spending 120 minutes or more in nature are statistically different based on gender (Table 6). Men and women had statistically significant different proportions of respondents reaching the 120-minute threshold: 34% vs. 31%. For those whose gender was defined "in another way", 23% were estimated to spent 120 minute or more in nature weekly. Note that, given the low number of respondents self-identifying "in another way" and the wide range covered by the confidence intervals, caution should be applied when generalising these results to the English population.

Table 6. Proportion of weekly time spent in nature by gender (April 2020 - March 2021)

Gender	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Male (a)	12,268	34% b	55% b	10% b	33%	35%
Female (b)	12,699	31% a	60% a	9% a	30%	33%
In another way (c)	27	23% [Note 2]	62% [Note 2]	15% [Note 2]	10%	46%
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing.

Differences in time spent in nature according to ethnicity

The results indicated statistically significant differences across ethnic groups in the time spent in nature weekly (Table 7). Survey respondents were allowed to opt out of providing their ethnicity, which led to a large proportion of missing values in this variable (i.e. “Did not answer”). Nonetheless, this group’s results on the outcome variable have been include in Table 7.

White respondents and those in the “any other ethnic group or background/mixed” category had the highest percentage of people reaching the 120-minutes threshold (35% and 33%, respectively). Following them, Black or Black British and Asian or Asian British groups showed similar proportions with roughly one in four reaching this target (23% and 24%, respectively). Lastly, respondents that had not provided their ethnicity had the lowest proportion, at 13%. This group also had a disproportionately large number of respondents that said “Don’t know” or “Prefer not to say” in the time variables. This suggests that this group might include respondents of a specific profile, or these respondents were not as engaged with the survey questions.

Table 7. Proportion of weekly time spent in nature by ethnicity (April 2020 - March 2021)

Ethnicity	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
White (a)	21,074	35% c,d, e	57% c,d	8% b,c,d,e	34%	35%
Any other ethnic group or background/ Mixed (b)	792	33% c,d, e	54% c,d	13% a,e	29%	37%
Black or Black British (c)	720	23% a,b, e	64% a,b,e	13% a,e	19%	27%
Asian or Asian British (d)	1,687	24% a,b, e	62% a,b,e	14% a,e	22%	27%
DK/PNS	2	67% [Note 2]	33% [Note 2]	-	-	-
Did not answer (e)	719	13% a,b,c,d	57% c,d	30% a,b,c,d	10%	16%

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Differences in time spent in nature according to deprivation

Table 8 presents a summary of the results on time spent in nature weekly based on deprivation levels as indicated by the Index of Multiple Deprivation (IMD) in England. The IMD represents the deprivation level of the location where participants live and serves as a proxy for socioeconomic status.

The results indicated significant differences in the time spent in nature based on deprivation. Respondents classified as “not deprived” had the highest proportion of people spending at least 120 minutes in nature weekly, with over one-third (36%) meeting this

benchmark. This was statistically higher than the proportion of “deprived” respondents, where just over one-quarter (28%) reached the same threshold. Respondents that had not provided the necessary information to estimate their deprivation level had the lowest proportion, at 26%. As found among ethnicity subgroups, this group had a disproportionately large number of respondents that said “Don’t know” or “Prefer not to say” in the time variables. This suggests that this group might include respondents of a specific profile, or these respondents were not as engaged with the survey questions.

Table 8. Proportion of weekly time spent in nature by deprivation (April 2020 - March 2021)

IMD	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Not deprived (a)	16,202	36% b,c	57% b,c	6% b,c	35%	37%
Deprived (b)	3,886	28% a,c	63% a,c	9% a,c	26%	30%
DK/PNS	-	-	-	-	-	-
Did not answer (c)	4,906	26% a,b	55% a,b	20% a,b	24%	27%

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to health

Table 9 summarises the proportion of weekly time spent in nature by self-reported health status. The differences across all the three health status groups (i.e. “good”, “fair”, and “bad”) were found to be statistically significant. Respondents who reported being in “good” health showed the highest proportion of people meeting 120-minute threshold (38%). This proportion was lower for those reporting “fair” (24%) or “bad” health (16%).

Although these results suggest a potential link between better health and higher levels of nature engagement, exploring the stability or magnitude of this relation is beyond the remit of this piece. It is also not possible to determine the causation mechanism in this association, i.e. whether good health causes people to spend more time in nature or whether being in nature promotes good health or whether there is a third unobserved variable that is causing both good health and leading people to spend more time in nature.

Table 9. Proportion of weekly time spent in nature by health status (April 2020 - March 2021)

General Health	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Good (a)	17,014	38% b,c	52% b,c	9%	37%	39%
Fair (b)	6,682	24% a,c	66% a,c	10%	23%	26%
Bad (c)	1,296	16% a,b	76% a,b	9%	13%	18%
DK/PNS	2	-	100% [Note 2]	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Differences in time spent in nature according to employment status

The results revealed statistically significant differences in the proportion of time spent in nature weekly based on employment status (Table 10). Respondents who were in full-time/part-time employment, or self-employed had the highest proportion of people spending 120 minutes or more in nature weekly, at 35%. Retired respondents and students ranked second, with 33% and 30% respectively, spending 120 minutes or more in nature weekly.

Unemployed respondents and those who were on care or sick leave had the lowest proportion, with less than a quarter spending 120 minutes or more in nature weekly (24% and 22% respectively).

Table 10. Proportion of weekly time spent in nature by employment (April 2020 - March 2021)

Employment Status	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Retired (a)	5,756	33% b,c,d,e	63% b,c,d,e	4% b,c,d,e	31%	35%
Employed (b)	14,274	35% a,c,d,e	54% a,d,e	10% a,c,d,e	34%	36%
Student (c)	1,368	30% a,b,d,e	54% a,d,e	16% a,b,e	27%	33%
Unemployed (d)	1,273	24% a,b,c	60% a,b,c,e	16% a,b,e	22%	27%
Leave Care/Sick (e)	2,322	22% a,b,c	69% a,b,c,d	9% a,b,c,d	20%	24%
DK/PNS	1	-	-	100% [Note 2]	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Results from April 2021 to March 2022

Population level results

This section summarises the weighted percentage of respondents in the sample that spent above or below the 120-minute threshold in nature every week from April 2021 to March 2022. The results indicated that about one-third (32%) of respondents spent 120 minutes or more a week in nature, whereas over half of the respondents (56%) spent less than that (Table 11). The remaining 12% represents the individuals who chose either “Don’t know” or “Prefer not to say” (i.e. DK/PNS) when asked about the number of trips or time they spent in nature.

Table 11. Proportion of weekly time spent in nature (April 2021 - March 2022)

Weekly time spent in Nature	Total Unweighted Base	Weighted Proportion ≥120 minutes	Weighted Proportion <120 minutes	Weighted Proportion DK/PNS	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Equal or over 120 minutes	7,175	32%	31%	33%	31%	35%
Less than 120 minutes	12,592	56%	55%	57%	34%	36%
DK/PNS	2,691	12%	11%	12%	27%	33%
Not asked	2,529	-			22%	27%
Total	24,987	-	-		20%	24%

Source: A-PaNS

Differences between demographic groups of interest

This section outlines the differences across the demographic subgroups of interest (i.e., age, gender, ethnicity, health, and employment status).

Differences in time spent in nature according to age

The results indicated that there were statistically significant differences in the proportion of respondents spending 120 minutes or more in nature weekly across age groups (Table 12). The highest proportions were found among older age groups, with 35% of respondents aged 55-64 and 34% of those aged 65+ meeting the 120-minute threshold. However, these two groups also had the highest proportion of respondents below the 120-minute threshold (59% and 60%, respectively). This is possible because they had the lowest proportion of respondents in the “Don’t know/Prefer not to say” (“DK/PNS”) category, both at 6%.

Younger age groups showed statistically significantly lower proportions, with 29% of respondents aged 16-24 and 25-54 reaching the same threshold. It is also worth noting that the younger respondents had a statistically significant higher portion of “DK/PNS” responses, meaning they did not specify the number of visits or time spent in nature in the last 14 days.

Table 12. Proportion of weekly time spent in nature by age bands (April 2021 – March 2022)

Age band	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
16-24 (a)	2,968	29% d,e	49% b,c,d,e	22% b,c,d,e	27%	31%
25-39 (b)	6,065	29% d,e	54% a,c,d,e	17% a,c,d,e	28%	31%
40-54 (c)	6,209	31% c,d	57% a,b,e	12% a,b,d,e	30%	32%
55-64 (d)	3,854	35% a,b,c	59% a,b	6% a,b,c	34%	37%
65+ (e)	5,891	34% a,b,c	60% a,b,c	6% a,b,c	33%	36%
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to gender

The results showed statistically significant differences in the proportion of respondents spending 120 minutes or more in nature based on gender (Table 13). Among men, 33% were observed to spend at least 120 minutes weekly in nature, which was higher than the 31% observed for women. For those whose gender was defined “in another way”, only 18% were estimated to meet the 120-minute threshold. Note that, given the low number of respondents self-identifying “in another way” and the wide range covered by the confidence intervals, caution should be applied when generalising these results to the English population.

Table 13. Proportion of weekly time spent in nature by gender (April 2021 - March 2022)

Gender	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Male (a)	12,134	33% b,c	54% b,c	13% b	32%	34%
Female (b)	12,801	31% a,c	58% a,c	11% a	30%	32%
In another way (c)	52	18% a,b	73% a,b	9%	9%	33%
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to ethnicity

The findings revealed statistically significant differences across ethnic groups in the time spent in nature weekly (Table 14). As in the previous year, survey respondents were allowed to opt out of providing their ethnicity, which led to a larger proportion of missing values (i.e. Did not answer). Nonetheless, this group's results on the outcome variable have been included in Table 14.

Approximately one-third (33%) of the self-identifying White respondents were estimated to spend at least 120 minutes in nature weekly. This was not statistically significantly different from those in "any other ethnic group or background/mixed". Results from Asian or Asian British respondents were statistically significantly below the former groups, with just under a quarter (24%) reaching this benchmark. Black or Black British respondents and those who did not provide their ethnicity had the lowest proportion of people spending 120 minutes or more in nature (20% and 17% respectively).

Those who did not provide their ethnicity also had a disproportionately large number of respondents that said "Don't know" or "Prefer not to say" in the time variables. This suggests that this group might include respondents of a specific profile, or these respondents were not as engaged with the survey questions.

Table 14. Proportion of weekly time spent in nature by ethnicity (April 2021 - March 2022)

Ethnicity	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
White (a)	21,195	33% c,d,e	56% b,c,e	11% b,c,d,e	32%	34%
Any other ethnic group or backgro und/ Mixed (b)	785	32% c,d,e	51% a,c,d	16% a,e	28%	37%
Black or Black British (c)	754	20% a,b,d	63% a,b,d,e	17% a,e	17%	24%
Asian or Asian British (d)	1,631	24% a,b,c,e	58% b,c,e	18% a,e	22%	27%
DK/PNS	-	-	-	-	-	-
Did not answer (e)	622	17% a,b,d	51% a,c,d	32% a,b,c,d	14%	22%
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to deprivation

Table 15 presents a summary of the results on time spent in nature weekly based on deprivation levels, as indicated by the IMD. Results reflected statistically significant differences according to deprivation level. Among the respondents classified as “not deprived”, 35% spent 120 minutes or more in nature weekly. This was statistically significantly higher than those in the “deprived” category, where just over one in four (27%) met the same threshold. Respondents that had not provided the necessary information to estimate their deprivation level had the lowest proportion, at 24%. This group also had a disproportionately large number of respondents that said “Don’t know” or “Prefer not to say” in the time variables. This suggests that this group might include respondents of a specific profile, or these respondents were not as engaged with the survey questions.

Table 15. Proportion of weekly time spent in nature by deprivation (April 2021 - March 2022)

IMD	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Not deprived (a)	16,160	35% b,c	56% b,c	8% b,c	35%	36%
Deprived (b)	4,089	27% a,c	62% a,c	11% a,c	25%	28%
DK/PNS	-	-	-	-	-	-
Did not answer (c)	4,738	24% a,b	52% a,b	25% a,b	24%	27%

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to health

Table 16 shows that there were statistically significant differences across groups depending on their self-reported general health status. Results show a clear trend with those with better health being more likely to spend more time in nature.

Compared to the remaining groups, respondents with “good” health had the largest proportion (36%) of people spending 120 minutes or more in nature weekly. Only one in four respondents (25%) in the “fair health” group reached that threshold. This was even lower for those with “bad” health where only 21% spent 120 minutes or more in nature weekly.

As in the previous year, these results suggest a potential link between better health and higher levels of nature engagement.

Table 16. Proportion of weekly time spent in nature by health status (April 2021 - March 2022)

General Health	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Good (a)	16,388	36% b,c	52% c,b	12% c	35%	37%
Fair (b)	7,066	25% a,c	63% a,c	12% c	24%	26%
Bad (c)	1,530	21% a,b	69% a,b	10% a,b	18%	23%
DK/PNS (d)	3	18% *	82% *	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Differences in time spent in nature according to employment status

Table 17 provides an overview of how the amount of time spent in nature varied statistically significantly by employment status. Retired respondents had the highest proportion, with 35% spending at least 120 minutes in nature weekly. Those in employment had a lower proportion (33%), although both were higher than students (30%). The groups with lowest proportion of people meeting the threshold were those who were unemployed (23%) or on leave due to care responsibilities or sick leave (23%).

Table 17. Proportion of weekly time spent in nature by employment (April 2021 - March 2022)

Employment Status	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Retired (a)	6,073	35% b,c,d,e	60% b,c,e	6% b,c,d,e	33%	36%
Employed (b)	13,797	33% a,c,d,e	54% a,d,e	13% a,c,d	32%	34%
Student (c)	1,210	30% a,b,d,e	51% a,d,e	19% a,b,e	26%	33%
Unemployed (d)	1,170	23% a,b,c	58% b,c,e	19% a,b,e	20%	26%

Employment Status	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Leave Care/Sick (e)	2,732	23% a,b,c	65% a,b,c,d	12% a,c,d	21%	25%
DK/PNS	5	-	63% [Note 2]	37% [Note 2]	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Results from April 2022 to March 2023

Population level results

This section summarises the weighted percentage of respondents in the sample that spent 120 minutes or more in nature every week from April 2022 to March 2023. The results showed that approximately one in three (32%) respondents spent 120 minutes or more a week in nature, while more than half of the respondents (56%) spent less than that (Table 18). The remaining 12% represents the individuals who chose either “Don’t know” or “Prefer not to say” (i.e. DK/PNS) when asked about the number of trips or time they spent in nature.

Table 18. Proportion of weekly time spent in nature (April 2022 - March 2023)

Weekly time spent in Nature	Total Unweighted Base	Weighted Proportion ≥120 minutes	Weighted Proportion <120 minutes	Weighted Proportion DK/PNS	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Equal or over 120 minutes	7,139	32%	31%	32%	33%	36%
Less than 120 minutes	12,472	56%	55%	57%	32%	34%
DK/PNS	2,806	12%	12%	13%	26%	33%
Not asked	2,570	-	-	-	20%	26%
Total	24,987	-	-	-	21%	25%

Source: A-PaNS

Differences between demographic groups of interest

This section covers the demographic subgroups differences across the demographic groups of interest (i.e. age, gender, ethnicity, health, and employment status).

Differences in time spent in nature according to age

As Table 19 shows, respondents aged 55-64 had the highest proportion with 34% meeting the 120-minute threshold. This was not statistically significantly different from those aged 65+, i.e. 33%. These two groups also had the highest proportion of respondents below the 120-minute threshold (58% and 61%, respectively). This is possible because they had the lowest proportion of respondents in the “Don’t know/Prefer not to say” (“DK/PNS”) category (8% and 6%).

Younger age groups had statistically significantly lower proportions with 31% of respondents aged 16-24, 30% of those aged 25-54, and 30% of those aged 40-54 spending 120 minutes or more per week in nature.

Table 19. Proportion of weekly ime spent in nature by age bands (April 2022 - March 2023)

Age Bands	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
16-24 (a)	3,141	31% d	46% b,c,d,e	23% b,c,d,e	29%	33%
25-39 (b)	6,100	30% d,e	53% a,c,d,e	17% a,c,d,e	29%	32%
40-54 (c)	6,144	30% d,e	59% a,b	11% a,b,d,e	28%	31%
55-64 (d)	3,805	34% a,b,c	58% a,b,e	8% a,b,c,e	33%	36%
65+ (e)	5,797	33% b,c	61% a,b,d	6% a,b,c,d	32%	35%
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to gender

The results revealed statistically significant differences across gender groups in the proportion of respondents spending 120 minutes or more in nature (Table 20). In the women's sample, 31% reached the 120-minutes threshold while 33% met this target in the men's group. These proportions were statistically significantly higher compared to those who said their gender identity was defined "in another way", where one in three (29%) spent 120 minutes or more per week in nature. Note that, given the low number of respondents self-identifying "in another way" and the wide range covered by the confidence intervals, caution should be applied when generalising these results to the English population.

Table 20. Proportion of weekly time spent in nature by gender (April 2022 - March 2023)

Gender	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Male (a)	12,153	33% b	55% b	13%	32%	34%
Female (b)	12,766	31% a	57% a	12%	30%	32%
In another way (c)	68	29%	53%	17%	18%	44%
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to ethnicity

There were statistically significant differences in the amount of time spent in nature depending on ethnicity (Table 21). Around one in three (33%) self-identifying White respondents spent 120 minutes or more in nature weekly. This was comparable with the 31% of respondents in the Mixed/Other ethnic group who also spent 120 minutes or more in nature. In contrast, Black or Black British groups, as well as Asian or Asian British groups had statistically significantly lower percentages of respondents engaging with nature beyond the 120-minutes threshold, i.e. 25% and 23%, respectively. Respondents that had not provided their ethnicity had the lowest proportion, at 18%. These results suggest differences in nature engagement across ethnic groups.

Table 21. Proportion of weekly time spent in nature by ethnicity (April 2022 - March 2023)

Ethnicity	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
White (a)	21,094	33% c,d,e	56% d	11% b,c,d,e	32%	34%
Any other ethnic group or backgro und/	793	31% c,d,e	55%	14% a,c,d,e	27%	35%

Ethnicity	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Mixed (b)						
Black or Black British (c)	831	25% a,b,e	55% d	20% a,b,e	22%	29%
Asian or Asian British (d)	1,731	23% a,b,e	59% a,d,e	18% a,b,e	21%	26%
DK/PNS	2	-	72% [Note 2]	28% [Note 2]	-	-
Did not answer (e)	536	18% a,b,c,d	52% d	30% a,b,c,d	14%	22%

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Differences in time spent in nature according to deprivation

Table 22 summarises the results of nature engagement by levels of deprivation, as measured by IMD. Results showed that fewer deprived respondents (29%) spent 120 minutes or more in nature compared to not deprived respondents (34%). Respondents that had not provided the necessary information to estimate their deprivation level had the lowest proportion, at 25%. This suggests that this group might include respondents of a specific profile, or these respondents were not as engaged with the survey questions.

Table 22. Proportion of weekly time spent in nature by deprivation (April 2022 - March 2023)

IMD	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Not deprived (a)	15,860	34% b,c	57% b,c	9% b,c	33%	35%
Deprived (b)	4,267	29% a,c	59% a,c	11% a,c	28%	31%
DK/PNS	-	-	-	-	-	-
Did not answer (c)	4,860	25% a,b	51% a,b	24% a,b	24%	27%

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to health

The results showed that there were statistically significant differences between all groups according to their health (Table 23). Results reflected that individuals reporting “good” health were the most likely to spent 120 minutes or more weekly in nature, with 36% of them meeting this threshold. Those reporting “fair” health had a lower proportion of people spending 120 minutes or more in nature (26%) while individuals reporting “bad” health had the lowest proportion (21%).

Table 23. Proportion of weekly time spent in nature by health status (April 2022 - March 2023)

General Health	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Good (a)	16,090	36% b,c	52% b,c	12% b,c	35%	37%
Fair (b)	7,173	26% a,c	60% a,c	14% a	25%	27%
Bad (c)	1,723	21% a,b	66% a,b	14% a	18%	23%
DK/PNS	1	100% [Note 2]	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Differences in time spent in nature according to employment status

Time spent in nature also appeared to be influenced by respondents' employment status (Table 24). Retirees and employed demonstrated the highest proportion of individuals spending 120 minutes or more weekly in nature (34% and 33% respectively). Students had a lower proportion (i.e. 30%) compared to those retired but it was not statistically significantly different from those employed. The proportion of individuals spending 120 minutes or more weekly in nature was the lowest for unemployed respondents (25%) and those on care or sick leave (24%).

Table 24. Proportion of weekly time spent in nature by employment status (April 2022 - March 2023)

Employment Status	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Retired (a)	5,962	34% c,d,e	60% b,c,d	6% b,c,d,e	32%	35%
Employed (b)	14,074	33% d,e	54% a,c,e	13% a,c,d	32%	34%
Student (c)	1,156	30% a,d,e	48% a,b,d,e	21% a,b,e	27%	34%
Unemployed (d)	1,169	25% a,b,c	54% a,c,e	21% a,b,e	22%	28%
Leave Care/Sick (e)	2,625	24% a,b,c	62% b,c,d	14% a,c,d	22%	26%
DK/PNS	1	-	-	100% [Note 2]	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Results from April 2023 to March 2024

Population level results

This section summarises the weighted percentage of respondents in the sample who spent 120 minutes or more in nature weekly from April 2023 to March 2024.

Approximately one in three (31%) respondents spent 120 minutes or more a week in nature, while more than half of the respondents (58%) spent less than that (Table 25). One in ten participants (11%) responded as “Don’t Know” or “Prefer not to say” (i.e. DK/PNS).

Table 25. Proportion of weekly time spent in nature (April 2023 - March 2024)

Total Time Spent a Week in Nature	Unweighted Base	Weighted Proportion	Confidence Interval Lower limit	Confidence Interval Upper Limit
Equal or over 120 minutes	7,084	31%	30%	32%
Less than 120 minutes	12,834	58%	57%	59%
DK/PNS	2,481	11%	11%	12%
Not asked	2,562	-	-	-
Total	24,961	-	-	-

Source: A-PaNS

Differences between demographic groups of interest

This section covers the demographic subgroup differences across the demographic groups of interest (i.e. age, gender, ethnicity, health, and employment status).

Differences in time spent in nature according to age

Adults aged 55-64 had the highest proportion with 34% of them spending 120 minutes or more in nature weekly. This proportion was statistically significantly different to the rest of the groups where 30% of respondents in each spending 120 minutes or more in nature (see Table 26).

Those over 65 had the highest proportion of respondents below the 120-minute threshold (64%, respectively). This is possible because they had the lowest proportion of respondents in the “DK/PNS” category (6%).

Table 26. Proportion of weekly time spent in nature by age (April 2023 - March 2024)

Age Bands	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
16-24 (a)	3,305	30% d	49% b,c,d,e	21% b,c,d,e	28%	32%
25-39 (b)	6,115	30% d	56% a,c,d,e	14% a,c,d,e	29%	32%
40-54 (c)	6,030	30% d	59% a,b,e	11% a,b,d,e	29%	32%
55-64 (d)	3,921	34% a,b,c,e	59% a,b,e	7% a,b,c	33%	36%
65+ (e)	5,590	30% d	64% a,b,c,d	6% a,b,c	29%	32%
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to gender

Results showed statistically significant gender differences (Table 27). In the women's sample, 30% spent 120 minutes or more per week in nature, which was below the men's sample (32%).

Around one in three (34%) respondents whose gender identity was defined "in another way" reached the 120-minutes benchmark. Note that, given the low number of respondents self-identifying "in another way" and the wide range covered by the confidence intervals, caution should be applied when generalising these results to the English population.

Table 27. Proportion of weekly time spent in nature by gender (April 2023 - March 2024)

Gender	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Male (a)	11,803	32% b	57% b	11%	31%	33%
Female (b)	13,112	30% a	59% a	11%	29%	31%
In another way (c)	46	34%	53%	14%	18%	55%
DK/PNS	-	-	-	-	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to ethnicity

Time spent in nature differed across ethnic groups (Table 28). Respondents self-identifying as White had the highest proportion (33%) of people spending 120 minutes or more in nature weekly. There were no statistically significant differences between those self-identifying as Black or Black British and those in the “any other ethnic group or background/Mixed” (28% and 25%, respectively). Those in the Asian or Asian British group and those who had not reported their ethnicity had the lowest proportions of people spending 120 minutes or more in nature weekly, i.e. 21% and 18%, respectively.

Table 28. Proportion of weekly time spent in nature by ethnicity (April 2023 - March 2024)

Ethnicity	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
White (a)	20,955	33% b,c,d,e	58% b,d,e	9% b,c,d,e	32%	33%
Any other ethnic group or background/Mixed (b)	722	28% a,d,e	54% a,d,e	18% a,e	24%	32%

Ethnicity	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Black or Black British (c)	1,212	25% a,d,e	58% e	17% a,e	22%	29%
Asian or Asian British (d)	1,581	21% a,b,c	60% a,b,e	18% a,e	19%	24%
DK/PNS	1	-	100% [Note 2]	-	-	-
Did not answer (e)	490	18% a,b,c	46% a,b,c,d	36% a,b,c,d,e	14%	23%

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Differences in time spent in nature according to deprivation

Time spent in nature weekly differed according to the deprivation level (Table 29). Among deprived respondents, 28% spent 120 minutes or more in nature weekly. On the contrary, 33% of not deprived respondents, met this threshold. Respondents that had not provided the necessary information to estimate their deprivation level had the lowest proportion, at 25%.

Table 29. Proportion of weekly time spent in nature by deprivation (April 2023 - March 2024)

IMD	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Not deprived (a)	15,801	33% b,c	59% b,c	8% b,c	33%	34%
Deprived (b)	4,294	28% a,c	62% a,c	10% a,c	26%	29%
DK/PNS	-	-	-	-	-	-
Did not answer (c)	4,866	25% a,b	52% a,b	23% a,b	24%	27%

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Differences in time spent in nature according to health

There were statistically significant differences according to health status (Table 30). Respondents reporting “good” health showed the highest proportion of people spending 120 minutes or more in nature weekly (35%). In contrast, those reporting “fair” health seem to have lower engagement, with only 26% spending 120 minutes or more in nature on a weekly basis. As for the individuals reporting “bad” health, only 19% of them met the 120-minute threshold.

Table 30. Proportion of weekly time spent in nature by health status (April 2023 - March 2024)

General Health	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Good (a)	16,200	35% b,c	54% b,c	11%	34%	36%
Fair (b)	7,081	26% a,c	63% a,c	12%	24%	27%
Bad (c)	1,678	19% a,b	69% a,b	12%	17%	21%
DK/PNS	2	-	-	100% [Note 2]	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Differences in time spent in nature according to employment status

The proportion of respondents spending 120 minutes or more in nature weekly differed across respondents depending on their employment status (Table 31). One in three retired and employed respondents (32% in each) spent 120 minutes or more in nature weekly. This was statistically significantly lower in the rest of the groups: 25% among students, 24% of those on leave/sick leave and 23% among unemployed.

Table 31. Proportion of weekly time spent in nature by employment status (April 2023 - March 2024)

Employment Status	Total Unweighted Base	Weighted Proportion ≥120 minutes [Note 1]	Weighted Proportion <120 minutes [Note 1]	Weighted Proportion DK/PNS [Note 1]	Confidence Interval ≥120 minutes Lower limit	Confidence Interval ≥120 minutes Upper limit
Retired (a)	5,689	32% c,d,e	62% b,c,d	6% b,c,d,e	31%	34%
Employed (b)	14,281	32% c,d,e	56% a,e	12% a,c,d	31%	33%
Student (c)	1,226	25% a,b	53% a,d,e	21% a,b,e	22%	29%
Unemployed (d)	1,207	23% a,b	58% a,c,e	18% a,b,e	20%	26%
Leave Care/Sick (e)	2,556	24% a,b	63% b,c,d	13% a,c,d	22%	26%
DK/PNS	2	-	-	100% [Note 2]	-	-
Did not answer	-	-	-	-	-	-

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Note 2: The sample is too small to carry out significance testing or Confident Intervals.

Population-level changes between April 2020 and March 2024

This section compares the weekly time spent in nature between the financial years April 2020 and March 2021 (year 1), April 2021 and March 2022 (year 2), April 2022 and March 2023 (year 3), and April 2023 and March 2024 (year 4).

Results in Table 32 showed that year 1 had the highest proportion of respondents spending *120 minutes or more* in nature weekly, at 33%. This was statistically significantly different to the proportions in year 2 and year 3, both at 32%, and year 4 (31%). Additionally, the proportion of respondents spending *less* than 120 minutes in nature was also statistically significantly higher in year 4 compared to the previous two (i.e. 58% vs. 56%), although it was the same as in year 1, i.e. 58%.

Overall, results seemed to suggest a decline in the percentage of people meeting the 120-threshold. However, it is important to consider the effects of lockdown measures implemented during the COVID-19 pandemic which started in the spring of 2020. These measures resulted in a proportion of the population being placed on furlough with limited recreational options other than accessing green spaces. Therefore, rather than indicating a decline, this data may suggest a reversion to pre-pandemic levels. Exploring this hypothesis is beyond the remit of this piece of research but data from following years could confirm whether the proportion of people meeting the 120-minutes target stabilizes or keeps declining.

Table 32. Comparison of the proportions of time spent in nature between April 2020 and March 2024

Total Time Spent Weekly In Nature	Weighted Proportion [Note 1] ≥120 minutes	Weighted Proportion [Note 1] < 120 minutes	Weighted Proportion [Note 1] DN/PNS
2020-2021 (a)	33% b,c,d	58% b,c	9% b,c,d
2021-2022 (b)	32% a,d	56% a,d	12% a,d
2022-2023 (c)	32% a	56% a,d	12% a,d
2023-2024 (d)	31% a,b	58% b,c	11% a,b,c

Source: A-PaNS

Note 1: Each lower-case letter represents one demographic subgroup, and these are used to represent statistically significant differences in pair-wise comparisons. Significance level was set at 0.05.

Demographic subgroup comparison between April 2020 and March 2024

In terms of the demographic subgroup comparisons, those with the highest proportion of respondents spending 120 minutes or more weekly in nature were largely consistent

across the years: men (32-34%), White respondents and those in the “any other/mixed ethnicity” (28-35%), respondents who were not deprived (33-36%), those with “good” health (35-38%), and retired or employed (32-35%). Overall, demographic subgroup differences seemed larger in terms of percentage-points differences in ethnicity, deprivation, general health, and employment status subgroups compared to age and gender subgroups.

There were also some differences across the four years. Firstly, as discussed in the previous section, lockdown measures encouraged greater interaction with nature. Consequently, several demographic subgroups had higher levels of engagement with nature in year 1 compared to subsequent years.

Secondly, although across the years higher proportions of older groups met the 120-minute threshold compared to younger respondents, the leading age group varied each year. In year 1, ages 55-64 and 40-54 had the highest engagement (37% and 34%). In years 2 and 3, the older age groups including people aged 55 and over (33-35%) were the most engaged. In the last year, the age group 55-64 led again on its own, at 34%.

Thirdly, although the “any other/mixed ethnicity” group had a similar proportion to White respondents in the first three years, in the last year people identifying as “any other/mixed ethnicity” had a statistically significantly smaller proportion compared to people identifying as “White”. Respondents that had not provided their ethnicity had the lowest percentage of respondents meeting the 120-minutes benchmark across all years (13-18%). However, this group also had a disproportionately large number of respondents that said “Don’t know” or “Prefer not to say” in the time variables. This suggests that this group might include respondents of a specific profile, or these respondents were not as engaged with the survey questions. Besides this group, Black or Black British respondents had the lowest proportion of people meeting the 120-minute target in the second year (20%), but in year 1 and 3, both Black or Black British (23% and 25%) and Asian or Asian British (24% and 23%) respondents had the lowest proportions. In the last year, Asian or Asian British respondents had the lowest percentage (21%).

In fourth place, and similarly to ethnicity subgroup’s results, respondents that had not provided the necessary information to estimate their deprivation level had the lowest proportion of people meeting the 120-minute threshold across all years (24-26%). This group also had a disproportionately large number of respondents that said “Don’t know” or “Prefer not to say” in the time variables. Besides this group, and although the “not deprived group” always had a higher proportion of respondents compared to the “deprived group”, the data suggests that the gap might have been closing from 36% vs. 28% in the first year to 33% vs. 28% in the last year. Lastly, a similar pattern might be emerging in employment status, where I differences were getting smaller in the last year compared to the first two. Note that these trends might also be byproducts of lockdown measures, which accentuated socio-economic inequalities which might have diminished since.

Summary of the findings

This research used the A-PaNS data from April 2020 to March 2024 to estimate the proportion of respondents who spent 120 minutes or more in nature weekly throughout the year. In addition, this piece also looked at demographic subgroup differences, i.e. age, gender, ethnicity, deprivation, self-reported general health status, and employment status.

At the population level, the results indicated that approximately one-third of the respondents surpassed the 120-minutes a week threshold in all four years (33% on the first year, 32% during the following two and 31% in the last year). In terms of the demographic subgroup comparisons, those with the highest proportion of respondents spending 120 minutes or more weekly in nature were also largely consistent across the four years: men (32-34%), White respondents and those in the “any other/mixed ethnicity” (28-35%), respondents who were not deprived (33-36%), had “good” health (35-38%), and were retired or employed (32-35%). Overall, demographic subgroups percentage-point differences seemed larger for the subgroups within ethnicity, deprivation level, general health and employment status categories compared to the differences seen within the age and gender groups.

In summary, the proportion of people benefitting from exposure to nature was similar across years at the population level. Additionally, the demographic subgroups with the highest percentages of respondents meeting the 120-minuntes threshold was mostly consistent across the four years.

Comparison with previous research

This work was based on previous research by White et al. (2019) who used England-wide data from 2014-2016 MENE survey to explore how much time people had spent in nature weekly to derive health benefits. Although their focus was not primarily on the amount of time respondents spent in nature, they found that 34% of respondents spent 120 minutes or more in nature each week, which is close to the proportion found in this research.

The main differences between White’s work and this research are: (1) the years on which the data was collected (i.e. 2014-2016 vs. April 2020 to March 2024), and (2) the specific survey questions being used. Regarding the questions used, participants in White’s paper were asked about the trips to nature that they had done in the previous 7 days, whereas the A-PaNS survey asked participants to think of the previous 14 days. This means that White might have found more people reporting none or fewer trips.

In terms of the similarities across these two studies, White also capped the maximum number of trips per week at seven and participants in both were asked to report the total amount of time that they had invested in one of the trips (i.e. “*How long did this visit last altogether?*”).

In summary, although there are some differences in the survey questions, they largely followed the same approach and found similar results.

Limitations

The major limitation in this research steams from the survey questions around time spent in nature. On the one hand, these questions only offer categorical options (e.g. “Over 2 hours and up to 3 hours”) which means that participants could not provide the specific amount of time they spent in nature. On the other hand, the question on total time spent in nature explicitly asks participants to consider the travelling time. Hence, this question is likely to overestimate the amount of time people spent in nature. To avoid this issue, researchers considered using an alternative question, i.e. *Q18c (M2A_Q8C), “During this visit, how long did you spend [in the main activity (Q18a)]?”.* Note that the proportion of respondents reaching the 120-minutes threshold was lower (around 10% less across groups) when using “main activity time” compared to “total time” at the population and subgroup level across years. These differences could be attributed to the fact that “main activity time” underestimates the total time people spent in nature, especially if they did several activities but could only report on one. Additionally, the differences could be due to sample sizes being considerably reduced when using “main activity time” (which was probably because many respondents had not travelled to nature for a specific activity such as doing a picnic, fishing, etc). The research team decided against using “main activity time” because with small samples it would have been more challenging to generalizing these results to the English population.

The variable measuring the number of trips also contributes to the research’s limitations. Firstly, the research team assumed a single trip in the last 14 days was representative of respondents’ overall visits to nature across the year. Although seasonal effects have been likely cancelled out by having surveyed respondents every month of the year, extrapolating from a single measure per respondent is not as reliable as averaging several measures. Secondly, considering participants could report multiple trips in a single day, and these may not be as long as the primary trip they provided time information on, the research team decided to cap the number of trips per day to one. This was done to avoid overestimating the time spent in nature. Because the main outcome measure was a dichotomous variable of over/under 120 minutes per week and that it would only take 18 minutes per trip and seven trips a week to reach that cut-off, having set a cut-off for the number of trips a week was unlikely to underestimate the proportion of people spending 120 minutes or more in nature.

The 120 minutes threshold itself can be seen as a limitation as it was cautioned by White et al as a starting point for discussion and further investigation, rather than an established threshold. We are not aware of a different, more established threshold, which is why 120 minutes was used.

Lastly, A-PaNS data does not allow researchers to estimate the actual health gains that people might experience from the exposure to nature, nor control for all individual factors that could impact these gains.

Glossary

IMD

The Index of Multiple Deprivation (IMD) is the official measure of relative deprivation in England, assessing small areas known as Lower-layer Super Output Areas (LSOAs) (Ministry of Housing, Communities & Local Government (2018 to 2021), 2019). It ranks areas from the most to the least deprived based on a combination of seven weighted domains: Income, Employment, Health Deprivation and Disability, Education, Crime, Barriers to Housing and Services, and the Living Environment. The IMD is part of the broader Indices of Deprivation (IoD) framework, which captures multiple aspects of deprivation beyond income, reflecting various challenges people may face in their living conditions.

References

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