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Epping Forest Visitor Survey 2019

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Summary

This report, commissioned by Epping Forest District Council on behalf of a partnership of local authorities and other stakeholders, updates previous visitor survey work at Epping Forest in 2017. The survey results provide up to date visitor information that will underpin strategic approaches to mitigation for urban development and increasing recreation pressure on Epping Forest Special Area of Conservation (SAC).

Survey work took place at 17 locations, interviews were conducted at each location with a random sample of people seen and counts were made of the total number of people visiting. 16 of the locations were within the SAC while a further location, at Wanstead Flats, was outside the SAC but represented a large area of greenspace just to the south of the SAC and also managed by the Corporation of London. Surveys took place in early September 2019 and involved 16 hours at each location, spread over daylight and including a weekend day and a weekday.

Key results included:

- 1,387 groups (involving 2,763 people) were counted entering¹ and a further 727 groups (1,324 people) passed through each survey point, equivalent to approximately 255 people per hour across all locations.
- Average group size (based on the tally data for people entering) was 1.99 people (including 0.4 minors) and 0.5 dogs.
- A total of 662 interviews were conducted, representing the access patterns of 1,431 people (only one person per group was interviewed).
- Interviewees were accompanied by a total of 386 dogs of which 45% were noted by the surveyor as being seen off-lead.
- Virtually all (97%) were on a short visit and had come directly from home on the day they were interviewed.
- There were a varied range of activities recorded, however the majority of interviewees were either dog walking (40%) or walking (30%). Other activities included cycling (8%), running (5%), outing with the family (3%) and enjoying the scenery (3%).
- Dog walking and walking were activities undertaken by at least one interviewee at all survey locations. At most locations dog walking was the most frequently cited activity, however walking was the most frequent activity at Broadstrod, Pillow Mounds, Hill Wood Tea Hut and Strawberry Hill.
- 67% of interviewees visited at least once a week, with 24% visiting daily. Dog walkers in particular were frequent visitors (49% of dog walkers visiting daily).

¹ Those entering being those accessing the site from the given survey point (e.g. leaving the car-park to start a walk) while those passing would be those moving through as part of a longer route (often cyclists and horse riders).

- Most interviewees were either visiting for 1-2 hours (37%) or for 30 minutes to an hour (35%)
- Many interviewees (35%) did not have a specific time of day that they tended to visit. For those interviewees that did specify a time, the most frequently cited period was between 7am and 10am (30%).
- Most interviewees (68%) stated they visited equally all year round, rather than in any one particular season or time of year.
- The majority (59%) of interviewees had been visiting for more than 10 years. Connaught Water and Buckhurst Cricket Ground were locations with relatively high proportions of visitors who have been visiting for more than 5 years.
- Two-thirds (66%) of interviewees arrived by car/van and a further 25% arrived on foot. Connaught Water was the location with the highest number of interviewees arriving by car (and also the highest percentage, 95%). Locations with reasonably high proportions of interviewees arriving on foot included Lakeside, St. Peters and Leyton Flats.
- A total of 650 routes were mapped. Across all interviewees and including sections of routes outside the site boundary, the median route length was 2,571m. The median for routes truncated within the SAC boundary and Wanstead Flats boundary was 1,989m.
- The median route length (not clipped to the SAC/Wanstead Flats boundary) for dog walkers was 2.34km, for walkers it was 2.99km, for cyclists it was 10.84km, for runners it was 5.32km and for all other interviewees 1.26km.
- Close to home (or other accommodation or work etc.) was by far the most common reason for site choice (i.e. why people had chosen that specific location rather than another location that day), cited by 33% of interviewees. Other factors cited by at least 10% of interviewees related to habit/familiarity (17%), to the presence of refreshments nearby (12%) and to the scenery/variety of views (14%).
- Overall, 31% of interviewees indicated that all of their visits (for the given activity) took place at Epping Forest while a further 30% indicated that 75% or more of their visits took place at Epping Forest.
- Other locations, named as alternative locations visited by interviewees, included Wanstead, Lee Valley Park, Roding Valley, Walthamstow Wetlands and Chingford.
- 29% of interviewees were able to identify a different local greenspace site that could be improved for access and work as an alternative destination away from Epping Forest. Over 70 locations were identified and improvements predominantly related to removal of parking charges, issues with safety, fly tipping and dog mess, a need for better paths/path surfacing and the provision of refreshments.
- 38% of interviewees stated they had visited one of the visitor centres at Epping Forest over the past year and 30% of interviewees had spoken to a Corporation of London ranger or other staff member over the past year.
- In total, 595 interviewees gave full postcodes that could be matched to the national postcode database and accurately plotted within the GIS. Overall (across all interviewees) the median distance, as the crow flies, was 2.6km. For survey points that related to the SAC (excluding Wanstead Flats) and for those people on a short-visit directly from home (i.e. excluding the few holiday-makers) the median distance was 2.68km and 75% lived within 6.59km. Map 11 on page 54 shows the 75th percentiles and the interviewee postcodes and therefore indicates a potential zone of influence for recreation and the SAC.

- Dog walkers (median distance 1.84km) and daily visitors (median 1.72km) lived relatively close compared to other interviewees.
- Over a third (35%) of all interviewees that gave a full valid postcode were residents of the London Borough of Waltham Forest, with a further 31% residents of Epping District. 12% of interviewees came from London Borough of Redbridge and then no other local authority contributed more than 5% of the interviewees.

Contents

Summary	ii
Contents.....	v
Acknowledgements	vi
1. Introduction	1
Epping Forest	1
Summary of ecological interest	2
Status, conservation and setting	3
Concerns relating to recreation.....	3
Aims.....	6
2. Methods.....	7
Overview	7
Selection of survey points	7
Interviews.....	11
Visitor counts ('tallies').....	11
Survey timing and logistics	11
Analysis and data presentation.....	12
3. Results: Tally data: numbers of people counted during surveys.....	14
4. Results: Interview data.....	17
Overview	17
Activity (Q2).....	18
Frequency of visit (Q3).....	21
Time of day (Q5).....	23
Time of year (Q6).....	23
Length of time visiting (Q7)	27
Mode of transport (Q8-9)	28
Visitor routes (Q10-11).....	31
Choice of location (Q12)	36
Other sites visited (Q14-16).....	38
Local greenspace sites that could be improved (Q17)	40
Interviewee use of existing visitor centres (Q20) and interaction with rangers (Q21).....	44
Visitor origins (Q23).....	47
5. Comparison 2017-2019.....	55
6. Discussion.....	59
Time of year	59
Implications for mitigation.....	60
Defining a zone of influence	60

7. References.....	62
Appendix 1: Questionnaire	63
Appendix 2: Improvements to local greenspace sites identified in Q17	75
Appendix 3: Local greenspace sites identified in Q17 and shown on Map 7	79

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Surveys were conducted by Julia Bastone, Graham Blight, Jackie Lake, Kim Leyland, Jenny Price, Jack Rawlings and Mel Roach. We extend our thanks to all those who stopped and gave their time to be interviewed. Fenella Lewin co-ordinated the fieldwork and route data were digitised by Zoe Caals.

1. Introduction

- 1.1 This visitor report has been commissioned by Epping Forest District Council (on behalf of a partnership of local authorities and other stakeholders) to build on previous visitor survey work (conducted in 2017) to better understand the visitor use of Epping Forest Special Area of Conservation (SAC). The survey results will be used to inform the on-going development of joint strategies that will address the need to avoid and mitigate impacts to the SAC as a result of increased recreation use, linked to local plan-led development.

Epping Forest

- 1.2 The former royal forest of Epping Forest (which extends beyond the Special Area of Conservation) is London's largest open space, covering 2,400 hectares, framed by Walthamstow, Leytonstone and Wanstead to the south, the Lee Valley to the west, the M11 to the east and the M25 to the north. The Forest is run by a charity owned and managed by the City of London Corporation (CoL).
- 1.3 Epping Forest is wood-pasture with habitats of high nature conservation value including ancient semi-natural woodland, old grassland plains, wet and dry heathland and scattered wetland. The woodland represents one of the largest continuous semi-natural blocks in the country, characterised by groves of over-mature pollards. The plains contain a variety of unimproved acid grasslands uncommon elsewhere in Essex and the London area. The Forest supports a nationally outstanding assemblage of invertebrates, fungi, mosses and liverworts, veteran trees, amphibians and notable assemblages of breeding birds and lichens.
- 1.4 The Forest lies on a ridge of London clay overlain in places by Claygate Beds, and in the highest areas by Bagshot Sand and Pebble Gravel. The varied geology gives rise to a mosaic of soil types from neutral soils to acidic loams and from impervious clays to well-drained gravels. To a large extent the soil patterns have dictated the pattern of vegetation.
- 1.5 Historically Epping Forest was managed as wood-pasture through coppicing and latterly pollarding, which declined during the 19th century and eventually ceased in 1878 under the Epping Forest Act. Recently pollarding has been reinstated in some places along with extensive grazing.

Summary of ecological interest

- 1.6 Much of the woodland is dominated by veteran pollards of pedunculate oak, beech and hornbeam, with some of coppice origin indicating an even older management system. These exemplify the three main wood-pasture types found in Britain: oak-beech, oak-hornbeam and mixed oak. The understorey is often holly, which can form dense stands, and more rarely hazel or rowan. The ground flora is generally acid grassy heath. Dead and decaying wood in the old pollards, particularly those which are still standing, is valuable to many invertebrates and in particular to beetles.
- 1.7 Open grassland areas vary from acid grassland with relict heathland to more neutral grassland, with varying mixtures of fine grasses, sheep's sorrel, tormentil, rush and ling. In marshier areas purple moor-grass becomes dominant, with rushes and cross-leaved heath, and rarer species such as cotton-grass and sundew. The Forest supports an outstanding bryophyte flora numbering 177 species, and over 720 species of fungi and a notable lichen assemblage. There are many bogs, pools and ponds in the Forest, some of high botanical and entomological interest. The botanical quality and size of many of the open grassy areas has declined owing to cessation of grazing and subsequent scrubbing up, though this has been partly reversed by recent management.
- 1.8 The invertebrate fauna of Epping Forest is of outstanding national significance, notably for communities associated with over-mature trees and dead wood. The subcortical and dead wood fauna, and that associated with sap runs and water filled rot holes, is exceptional including 66 Red Data Book and nationally notable species of beetle, fly and spider. Other well represented communities are those occurring in bracket fungi of old trees, and the inquiline fauna of ants' nests in old stumps and rotting logs.
- 1.9 Although the prime interest for invertebrates is associated with the trees, the fauna associated with waterbodies and wetland is also of considerable note. More than 65 nationally notable species of dragonfly, water-bug, beetle and fly associated with various wetland habitats have been found in the Forest. In total, over 360 Red Data Book and nationally notable invertebrate species have been recorded from Epping Forest.
- 1.10 The wetland habitats in the Forest support an outstanding assemblage of amphibians including smooth newt and great-crested newt, and the Forest supports four reptiles: adder, grass snake, slowworm and common lizard. The Forest contains at least 48 breeding bird species.

Status, conservation and setting

- 1.11 Epping Forest was included in the Nature Conservation Review (Ratcliffe, 1977). Two thirds is designated, 1,728ha as SSSI and 1,605ha as SAC. The site hosts three Annex I habitats, together with the Stag Beetle, a species listed on Annex II.
- 1.12 The Forest is of great historical interest both for the history of its land use as a royal forest and wood pasture, and for specific historical features including two Scheduled Ancient Monuments: Ambresbury Banks and Loughton Camp.
- 1.13 The Forest is subject to the Epping Forest Act of 1878, which includes local byelaws under which Forest Keepers are entitled to act as 'attested constables' in prosecuting infringements.

Concerns relating to recreation

- 1.14 Epping Forest provides an attractive, extensive area of open semi-natural habitat and is the largest open space in London. As such it is a popular destination for recreation and provides an important function as a greenspace on the outskirts of London. There are 52 different car-parks and four visitor centres and estimates of visitor use indicate around 4.2 million visitors each year². Since Epping Forest was entrusted to the City of London Corporation, the provision of the space for public recreation and enjoyment has been a legal obligation and one of the key priorities for the Conservators. There is however a considerable challenge to balance the needs of the high (and growing) numbers of visitors with the natural aspect of the Forest and the nature conservation interest.
- 1.15 Growing numbers of visitors can result in conflict for space among users and demand for more facilities, such as parking, refreshments and toilets. There are also a number of potential ways recreation could have an impact on the nature conservation interest of the site. These include:
- Eutrophication from dog fouling
 - Trampling/wear, leading to soil compaction, vegetation wear, erosion and damage to veteran tree roots
 - Increased fire risk (and potentially difficulties in access for emergency vehicles if gates etc. are blocked)

² This figure is from the [Management Plan consultation](#) and is from 2014

- Difficulties in establishing the best grazing management due to interactions between visitors and livestock
- Direct damage to veteran trees, for example from climbing on them
- Harvesting, for example of fungi or deadwood
- Disturbance to invertebrates and other wildlife
- Spread of disease
- Spread of alien plants
- Staff time taken away from necessary management due to the need to deal with vandalism, breaches of byelaws etc.
- Direct damage and vandalism of infrastructure

- 1.16 SACs are within the top-tier of nature conservation sites within the UK. European legislation, which is transposed into the domestic Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations), and also stipulated within the National Planning Policy Framework (NPPF), affords European sites the highest levels of protection in the hierarchy of sites designated to protect important features of the natural environment.
- 1.17 The impacts of recreation listed above may not necessarily all be relevant to the SAC interest, nonetheless they represent a complex mix of potential risks from recreation and they may interact/act synergistically. The impacts are linked to the scale of recreation use, and with more visitors, the issues are likely to be exacerbated.
- 1.18 The Conservators of Epping Forest undertake on-going assessments of access and options, including focussing on the popular areas to determine whether they can cope with current access levels. The Conservators manage 33km of surfaced trails to support all-year round use (thereby reducing pressure on other areas) and each year temporary signage is put in place where there are concerns. Despite these measures, there is growing concern about the challenges of coping with the high visitor numbers and the potential for damage to the SAC interest if access levels keep increasing³. Increased housing development around the SAC will result in more people living nearby and as such is likely to increase recreation use.
- 1.19 The legislation sets out that where a land use plan, either alone or in combination, is likely to have a significant effect on a European site, the plan-making authority must undertake a Habitats Regulations Assessment (HRA). This applies to Local Plans produced by local authorities. Such plans set out a broad quantum of housing growth. HRA work must therefore consider the

³ See the most recent [Management Plan consultation](#).

overall impacts of such growth – in-combination with neighbouring authorities – and where there are any likely significant effects, adverse effects on the integrity of the site must be ruled out⁴.

1.20 As a result of concerns relating to recreation pressure on Epping Forest SAC, the local authorities of East Hertfordshire District Council, Epping Forest District Council, Harlow District Council and Uttlesford District Council signed a joint Memorandum of Understanding (MoU) in 2017 relating to the Epping Forest SAC. Other signatories on the MoU include the relevant County Councils, the City of London Corporation (CoL) and Natural England. The MOU represents a positive step by the authorities to cooperate. The four district local authorities make up a Housing Market Assessment (HMA) area and as such are working jointly to deliver housing targets. The aim of the Epping Forest MoU was to ensure the parties work together:

- to collect and analyse data and evidence related to the impacts of proposed development and growth under the Local Plans to provide sufficient and robust evidence on which to base a strategy for the protection of Epping Forest SAC; and
- to commit to prepare a joint strategy, based on relevant available data and evidence and to an agreed timetable.

1.21 Since the signing of the original MoU the partnership of local authorities has widened, reflecting the fact that the 2017 survey demonstrated that the geographic extent of recreational use and pressure from new development covered a different area to that of the MoU authorities. As a result an Oversight Group comprising a greater number of authorities has been established, and includes the London Boroughs of Waltham Forest, Redbridge, Newham, and Enfield, Broxbourne Borough Council and the Lee Valley Regional Park Authority. The authorities are working with both the Conservators of Epping Forest and Natural England to develop an appropriate strategic approach to address the requirement to avoid, or effectively mitigate, adverse impacts on the integrity of the SAC from Local Plan-led development and the requirement to prevent further deterioration of the SAC features. The visitor survey work is considered to be a key part of the evidence base to support the development of this strategic approach.

⁴ Unless there are imperative reasons of overriding public interest

Aims

- 1.22 This survey has therefore been commissioned by Epping Forest District Council on behalf of the wider partnership of authorities and the Conservators of Epping Forest to provide the visitor data necessary to underpin the development of the strategy. In particular, it builds on a previous survey (Liley, Panter, Weitowitz, & Saunders, 2018) and other visitor work undertaken at Epping Forest. The 2018 report was based on fieldwork in October and November 2017, a time of year when ground conditions are relatively damp underfoot and the weather can be inclement. The surveys undertaken in 2019 took place in early to mid September during a period of warmer weather and with longer daylight hours than the 2017 surveys and were nearly two years on from the previous work.
- 1.23 This new survey aimed to:
- Repeat the previous survey to provide data from a different time of year and update the survey results;
 - Collect additional postcode data to provide further information on where visitors originate from;
 - Inform mitigation measures, i.e. to gather information on what measures might be effective in changing behaviour, influencing where people go and what they do.

2. Methods

Overview

2.1 Visitor survey work involved interviews and counts of people at a sample of locations across Epping Forest, undertaken during September 2019. The counts provide an overview of visitor flows at each point and the visitor interviews, involving a random sample of people, provide data on visitor origins, visitor profile and factors that influence behaviour.

Selection of survey points

2.2 Survey points matched those used in the previous survey (see Liley et al., 2018 for details and selection process) selected to provide a sample of locations that:

- Represented a good geographic spread across Epping Forest, the vast majority of which were within the SAC;
- Included foot-only access points and car-parks;
- Included locations used for a range of activities, such as dog walking, horse riding etc.;
- Included the main 'honeypots' for visitors and well promoted sites with a range of facilities such as cafes and visitor centres;
- Included less well known or publicised locations.

2.3 Fifteen survey locations were included in the previous survey and two further survey points were added this time, providing additional geographic spread and additional data around the outside of the SAC towards the south.

2.4 Survey locations are summarised in Table 1 and Map 1. Table 1 describes each location and explains how the counts at each location were undertaken and where the surveyor stood. Survey locations 1-15 are those from the previous survey while numbers 16 and 17 relate to the new survey points added in 2019. Map 1 also shows the other main parking locations around the SAC that are managed by The Conservators, and therefore provides an overview of how the selected locations represent the distribution as a whole.

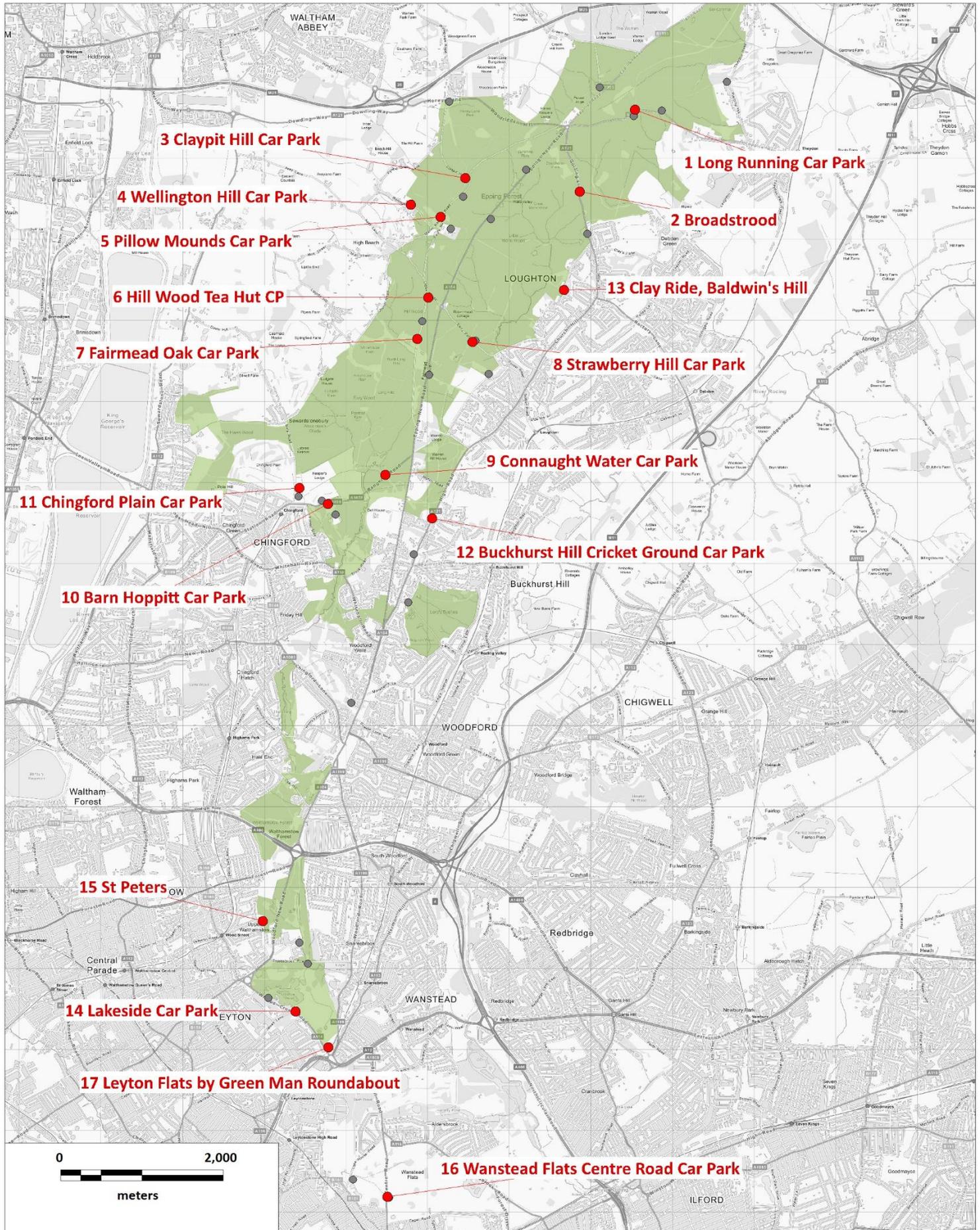
Table 1: Summary of survey points

Map Ref	Location	Description of location	Tally details	Gated/not
1	Long Running Car Park	Survey point in car-park on north side of road	Count of people passing through/in/out of car-park	Gated
2	Broadstrood	Survey point in car-park	Count of people passing through/in/out of car-park	Gated
3	Claypit Hill Car Park	Very muddy car-park with some recent fly-tipping, open to road. If safe to cross road interviews also conducted on other side of road	Count of people passing through/in/out of car-park	
4	Wellington Hill Car Park	Small car-park next to Duke of Wellington pub	Count of people passing through/in/out of car-park	Gated
5	Pillow Mounds Car Park	Long car-park with kiosk café. Visitor centre nearby. Interviews conducted on grass. Roam around perimeter of car-park (from kiosk to bin) in order to intercept people.	Tally of people in/out of car-park between kiosk and bin	
6	Hill Wood Tea Hut CP	Car-park next to small café, fine to interview people around café perimeter	Count of people passing through/in/out of car-park	Gated
7	Fairmead Oak Car Park	At end of track running past Hill Wood Tea Hut car-park. Bumpy track.	Count of people passing through/in/out of car-park	Gated
8	Strawberry Hill Car Park	Car-park next to pond. Potential to interview people at car-park at other side of road too, if safe to cross.	Count of people passing through/in/out of car-park (Strawberry Hill CP only)	
9	Connaught Water Car Park	Car-park next to lake. Survey point at back of car-park, next to interpretation panel, between lake and car-park	Tally solely along path from back of car-park, i.e. people on path from car-park to Lake (i.e. past survey point)	
10	Barn Hoppitt Car Park	Car-park opposite Butler's Retreat, large grassy extension area at back of car-park	Tally of people passing through open grassy area (extension car-park) and main car-park. Include people who cross road to use café etc.	

Map Ref	Location	Description of location	Tally details	Gated/not
11	Chingford Plain Car Park	Large car-park north of golf club. Survey point at back of car-park, next to finger post and interpretation board.	Tally solely along path from back of car-park, i.e. people passing interpretation panel and finger post	Gated
12	Buckhurst Hill Cricket Ground Car Park	Longish car-park between road and cricket pitch. Survey point at back of car-park where track heads off into the Forest	Tally of people using path and car-park, that cross-boundary of car-park. No need to count people on the cricket pitch	Gated
13	Clay Ride, Baldwin's Hill	Pedestrian access point with path running down slope beside houses	Tally of people entering/leaving down path	
14	Lakeside Car Park	Two connected car-parks, one next to Lakeside diner. Roam between back of café and gate with no barbeques or fires sign at back of other car-park.	Tally of people passing to/from car-park onto open grass or towards lake	
15	St Peters	Tarmac path running from Community Centre towards other road, other paths heading off. Survey point at first junction, just down path from Community Centre	Tally of all people along path (but not those sticking to the pavement people on pavement)	
16	Wanstead Flats Centre Road Car-Park	Obvious car-park on east side of road adjacent to large area of open grassland.	Count of people passing through/in/out of car-park	Gated
17	Leyton Flats by Green Man Roundabout	Southern corner of Flats, at gateway leading to pedestrian bridge and A12 roundabout	Count of people entering/leaving the gate just to north of pedestrian bridge of railway	

EB716

Map 1: Survey Points



 Epping Forest SAC

 Survey points

 Other (unsurveyed) CoL car-parks

Interviews

- 2.5 The questionnaire (Appendix 1) was similar to that used in 2017 and was conducted using tablet computers running SNAP survey software. Potential interviewees were selected at random, based on the next person seen by the surveyor (if not already conducting an interview). The interviewee's route was plotted in the field as lines on paper maps, cross referenced to the questionnaire data.

Visitor counts ('tallies')

- 2.6 Alongside the interview data, surveyors maintained a tally of all people passing, recording groups, individuals and dogs. The tallies also logged the number of minors, horses and bicycles. The counts enable us to compare sites in terms of visitor volume/footfall, and to identify what proportion of visitors were interviewed at each location. The counts are approximate as they are maintained while interviews are being conducted and, at busy sites in particular, it is difficult to maintain an accurate count simultaneously while talking to someone. Nonetheless the totals broadly capture the level of busyness at each location and are comparable. Details of how the counts were undertaken are summarised in Table 1.

Survey timing and logistics

- 2.7 Each surveyor carried a name badge, wore a branded hi-vis jacket and provided information cards for when members of the public wished to see identification or requested further information. Where parking was available, interviewers also had a poster clearly displayed in their car-window to indicate that the visitor surveys were taking place. No unaccompanied minors were approached or interviewed.
- 2.8 Surveyors undertook counts and visitor interviews within standard two-hour periods with survey effort stratified across weekdays and weekends, and standardised across survey points. Sixteen hours of survey work were conducted at each location, covering different times of day and evenly split between weekends and weekdays. While the level of survey effort per survey point was the same as 2017, the survey times were spread across daylight hours and therefore (due to the time of year) extended later into the day: 0700-0900; 1030-1230; 1400-1600; 1700-1900, with each period undertaken

during a weekend day and a weekday, giving 16 hours per location. Surveys took place between 5th and 16th September 2019.

- 2.9 Some car-parks are gated, with the gates closed overnight. The keepers were aware of visitor surveys taking place and every effort was made to ensure gates were not locked early. The gates in some car-parks allow cars to leave after the gates are locked but not to enter. Even when closed to vehicles all car-parks could have people passing through them on foot, bicycle or horse, and therefore the survey times were consistently used and the surveys started/continued even if the gates were shut.
- 2.10 Every effort was made to avoid adverse weather conditions. A total of 9 sessions (out of 120) included continuous rain; these sessions were spread across survey points 1,4,6,12,13 and 15.
- 2.11 The car-park at Location 4, Wellington Hill, had been closed since the 2017 survey and there was no parking at the location at all. In addition the pub had also closed and as such the survey point was markedly different to the previous survey.
- 2.12 At Long Running car-park survey effort on the weekday afternoon was curtailed due to anti-social behaviour. No tally data or interviews were conducted for the final two-hour session.

Analysis and data presentation

- 2.13 Route data were digitised within GIS (QGIS 2.18) as polylines, based on the mapped routes recorded on paper maps in the field. Routes were truncated to the SAC boundary to provide a route length within the SAC as well as the overall route length (total polyline length).
- 2.14 Home postcodes were geocoded using Royal Mail Postzon postcode data, from 2019. Only full, valid postcodes were used in analysis of visitor origins, part postcodes or named towns/villages were not included in any analysis due to the variation in precision.
- 2.15 Within analyses we refer to means where the data are normally distributed, and we use non-parametric tests and median values where the data are not normally distributed. In particular, data relating to routes on site or distances from home postcode to survey point tend to be positively skewed, with a small number of very high values. Box plots show median values

(horizontal lines), interquartile range (boxes) and the upper and lower limits of the data (whiskers). Outliers are shown with an asterisk. Percentages, where given, relate to the number of interviewees who answered the relevant question rather than the overall number of interviews.

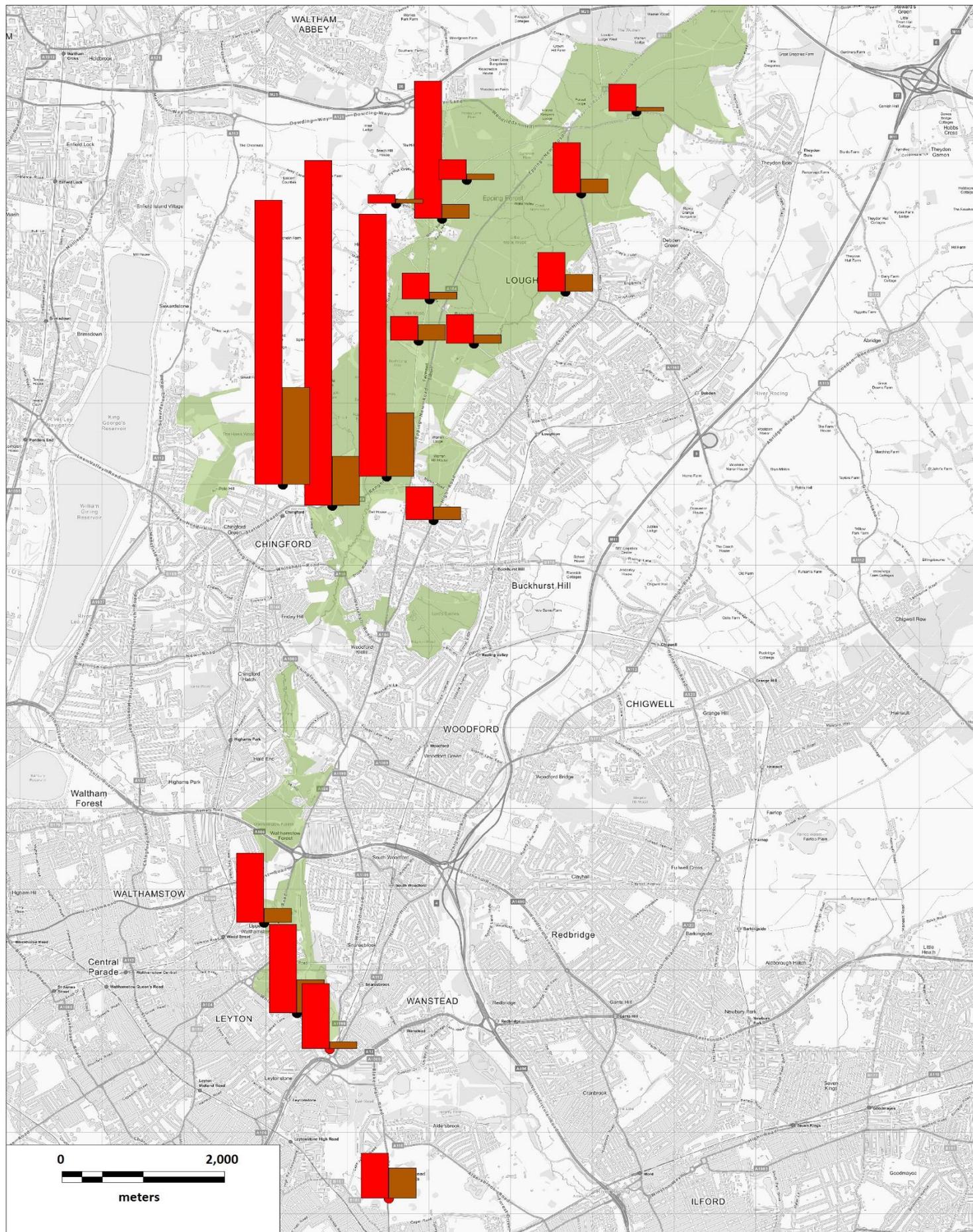
3. Results: Tally data: numbers of people counted during surveys

- 3.1 People were counted during the survey work, with a tally maintained while the surveyor was in place at each access point. Only a selection of people were interviewed at each location, and at very busy sites the proportion interviewed was relatively small (as only one person could be interviewed at a time). When very busy the counts by necessity are approximate, but they do they provide a reasonable indication of the overall visitor flow at the surveyed access points.
- 3.2 Across all the surveys a total of 1,387 groups (involving 2,763 individual people) were recorded 'entering' at the survey points, for example leaving their car at the car-park to go for a walk. In addition, there were a further 727 groups (1,324 people) that passed the surveyor but were not entering or leaving the site, i.e. groups who accessed the SAC elsewhere and passed by.
- 3.3 The combined total of people entering and passing (at all 17 locations) was 4,087, and included 13 people on horseback and 781 people on bicycles. The total of 4,087 is equivalent to 255 people per hour across all survey locations.
- 3.4 Tally data (those entering and passing) are summarised in Map 2. The busiest locations were those towards Chingford, with Barn Hoppitt (combined total of 1,254 people entering and/or passing), Chingford Plain (1,033 people entering/passing) and Connaught Water (951 people entering/passing) the three busiest locations. The totals for the Barn Hoppitt location are potentially an underestimate as there was a climbing event taking place on the 15th September where people were arriving for booked time slots, resulting in lots of activity that was difficult for the surveyor to keep track of.
- 3.5 The data for Long Running, while shown in Map 2, are not directly comparable to the other locations as survey work was curtailed on the weekday due to anti-social behaviour and therefore the survey effort there totalled 14 hours rather than 16. Furthermore, on the weekend day, during the afternoon, there was a memorial picnic taking place over the last two sessions and the surveyor noted he thought other visitors may have been deterred.

- 3.6 Taking just those recorded entering, the 1,387 groups included 2,763 people, of which 510 were recorded as minors, giving an average group size of 1.99 people (with 0.4 minors per group). The 2,763 people were also accompanied by 740 dogs, giving an average of 0.5 dogs per group.

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Map 2: Numbers of people and dogs counted (tally counts)



4. Results: Interview data

Overview

- 4.1 A total of 662 interviews were undertaken⁵. This total is the overall number of interviews with a minimum of activity and postcode (which were requested if the person was in a hurry or not able to complete the whole survey). 2 interviews of the 662 did involve just a postcode and activity and a small proportion of interviewees did not answer every question, these included 12 interviews where the surveyor noted language difficulties with the interviewee not having English as their first language.
- 4.2 Each interview typically took around 8 minutes (median 7.7 minutes). Slightly more men (355 interviews, 54%) were interviewed compared to women (46%).
- 4.3 Group size (i.e. number of people in the party with the interviewee, including the interviewee) ranged from 1 to 20 (the latter being a life walks group). Across all 662 interviewees the total number of people (i.e. the interviewees and others in their party) was 1,431, which included 185 minors (under 18s). This equates to an average group size (per interview) of 2.2 people (of which 0.3 were minors). There were 386 dogs noted by the surveyor accompanying interviewees, giving an average number of dogs per group of 0.6. The number of dogs per interviewed group ranged from 1 to 7. Of the 386 dogs, 164 (45%) were noted by the surveyor as being seen off-lead.

⁵ This total is the overall number of interviews with a minimum of activity and postcode, which were requested if the person was in a hurry and not able to complete the whole survey. 2 interviews of the 662 did involve just a postcode and activity and therefore for most data tables in the report the base sample is 660.

Table 2: Number (%) of interviews, refusals and people already interviewed, by survey point.

Survey Point ID	Survey Point Name	Number of interviews (%)	Number of refusals	Number already interviewed
1	Long Running Car Park	18 (3)	44	3
2	Broadstrood	29 (4)	7	7
3	Claypit Hill Car Park	41 (6)	8	2
4	Wellington Hill Car Park	7 (1)	27	3
5	Pillow Mounds Car Park	56 (8)	5	5
6	Hill Wood Tea Hut CP	39 (6)	19	9
7	Fairmead Oak Car Park	24 (4)	23	2
8	Strawberry Hill Car Park	42 (6)	15	2
9	Connaught Water Car Park	60 (9)	4	9
10	Barn Hoppitt Car Park	51 (8)	6	3
11	Chingford Plain Car Park	62 (9)	18	3
12	Buckhurst Hill Cricket Ground Car Park	31 (5)	12	1
13	Clay Ride, Baldwin's Hill	27 (4)	8	5
14	Lakeside Car Park	71 (11)	21	12
15	St Peters	46 (7)	4	13
16	Wanstead Flats Centre Road Car-Park	29 (4)	19	5
17	Leyton Flats by Green Man Roundabout	29 (4)	3	3
Total		662 (100)	243	87

4.4 Virtually all (644 interviewees, 97%) were on a short visit and had come directly from home (based on the responses to Q1). 4 interviewees were on holiday and staying in holiday accommodation (0.6%) and 8 interviewees (1.2%) were staying away from home, with family or friends. In addition, 5 interviewees had come from work (2 of these were commuting) and 1 group were doing their Duke of Edinburgh Award (and therefore didn't easily categorise as on holiday or not). In subsequent analyses and data presentation all interviews are grouped unless explicitly stated that holiday makers are removed.

Activity (Q2)

4.5 There were a varied range of activities recorded, however the majority of interviewees were either dog walking (40%) or walking (30%) (Table 3). 'Other' activities included commuting/accessing shops etc. (9 interviewees), feeding the ducks (2 interviewees) or other activities for children such as

riding scooters, climbing trees (3 interviewees), meditation (2 interviewees) or even just sitting in the sun (2 interviewees).

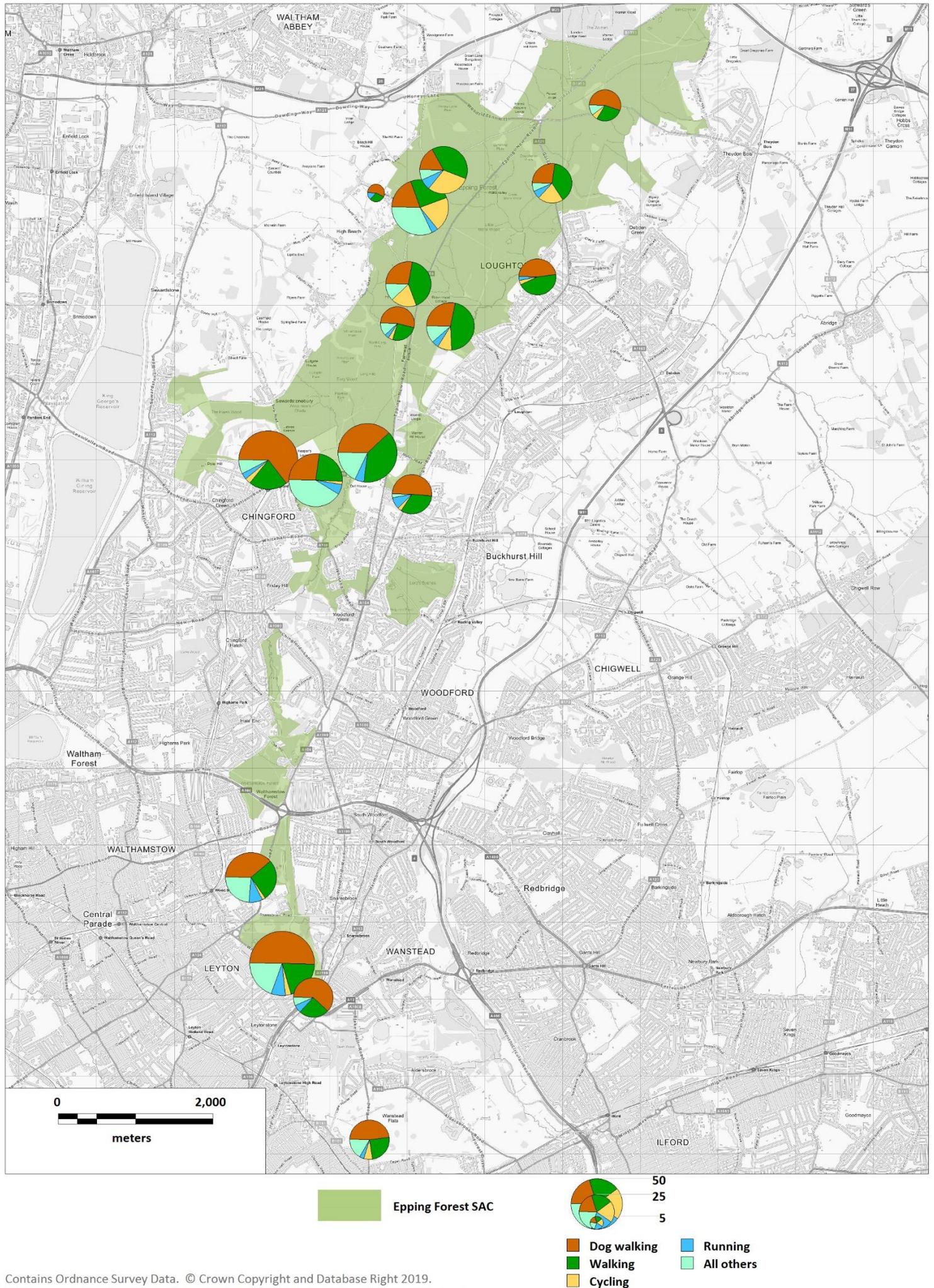
Table 3: Number (%) of interviewees by main activity (from Q2)

Activity	No. interviewees (%)
Dog walking	268 (40)
Walking	199 (30)
Cycling/Mountain Biking	52 (8)
Running	35 (5)
Outing with family	23 (3)
Enjoying scenery / fresh air	18 (3)
Visiting cafe/visitor centre	9 (1)
Bird/Wildlife watching	8 (1)
Picnic	4 (1)
Photography	3 (0)
Formal sports	3 (0)
Horse riding	3 (0)
Meeting up with friends	1 (0)
Other	36 (5)
Grand Total	662 (100)

- 4.6 Activities are summarised by survey point in Map 3. It can be seen that some interviewees were dog walking and some walking at all survey points. While at most locations dog walking was the most frequently cited activity, walking was the most frequent activity at Broadstrood, Pillow Mounds, Hill Wood Tea Hut and Strawberry Hill. Cycling was not the most frequent activity at any survey point but cyclists accounted for a high proportion of interviewees at Claypit Hill and Pillow Mounds.

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Map 3: Number of interviews by activity



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Frequency of visit (Q3)

4.7 The most commonly given frequency of visit was 1-3 times per week (29% of interviewees) (Table 4). A further 24% of interviewees indicated they visited daily. These were mostly dog walkers, with 49% of dog walkers stating they visited on a daily basis.

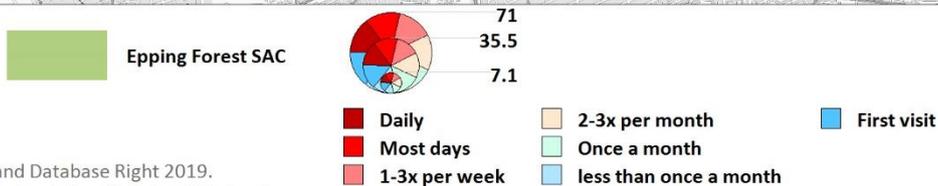
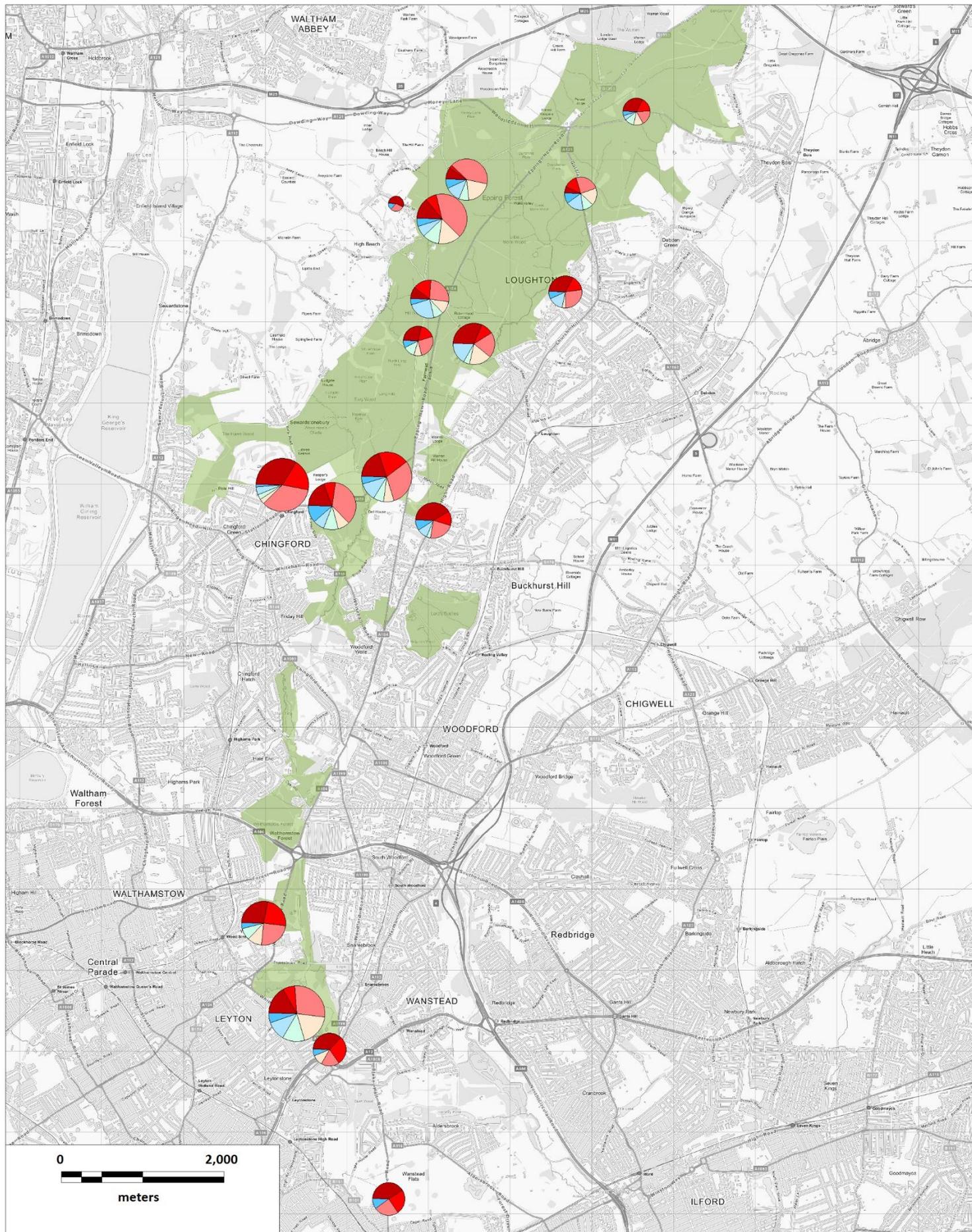
Table 4: Number (%) of interviewees and frequency of visit (from Q3) by activity. Grey shading indicates the highest value in each row, with the darker shading indicating the highest value.

Activity	Daily	Most days (180+ visits)	1 to 3 times a week (40-180 visits)	2 to 3 times per month (15-40 visits)	Once a month (6-15 visits)	Less than once a month (2-5 visits)	First visit	Total
Dog walking	132 (49)	40 (15)	59 (22)	11 (4)	10 (4)	9 (3)	6 (2)	267 (100)
Walking	14 (7)	27 (14)	61 (31)	29 (15)	13 (7)	29 (15)	25 (13)	198 (100)
Cycling/Mountain Biking	1 (2)	6 (12)	23 (44)	9 (17)	6 (12)	5 (10)	2 (4)	52 (100)
Running	5 (14)	8 (23)	14 (40)	4 (11)	2 (6)	1 (3)	1 (3)	35 (100)
Outing with family	1 (4)	0 (0)	4 (17)	4 (17)	4 (17)	6 (26)	4 (17)	23 (100)
Enjoying scenery/fresh air	1 (6)	2 (11)	4 (22)	4 (22)	2 (11)	4 (22)	1 (6)	18 (100)
Visiting cafe/visitor centre	0 (0)	1 (11)	4 (44)	1 (11)	2 (22)	1 (11)	0 (0)	9 (100)
Bird/Wildlife watching	1 (13)	1 (13)	4 (50)	0 (0)	1 (13)	1 (13)	0 (0)	8 (100)
Picnic	0 (0)	0 (0)	2 (50)	2 (50)	0 (0)	0 (0)	0 (0)	4 (100)
Photography	0 (0)	0 (0)	1 (33)	0 (0)	2 (67)	0 (0)	0 (0)	3 (100)
Formal sports	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)
Horse riding	1 (33)	0 (0)	2 (67)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)
Meeting up with friends	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)
Other	5 (14)	8 (22)	9 (25)	3 (8)	5 (14)	4 (11)	2 (6)	36 (100)
Total	161 (24)	93 (14)	190 (29)	68 (10)	47 (7)	60 (9)	41 (6)	660 (100)

4.8 The frequency responses are shown spatially, by survey point in Map 4. The locations with particularly high proportions of daily visitors were Wellington Hill, Buckhurst Hill Cricket Ground, Wanstead Flats and Leyton Flats. Barn Hoppitt Car-park was the location with the most people visiting for the first time (6 interviewees).

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Map 4: Number of interviews by frequency of visit



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Visit duration (Q4)

4.9 Most interviewees were either visiting for 1-2 hours (37%) or for 30 minutes to an hour (35%) (Table 5). Most (60%) of dog walkers were visiting for less than an hour, while for virtually all other activities most interviewees tended to visit for longer than an hour.

Table 5: Number (%) of interviewees and visit duration (from Q4) by activity. Grey shading indicates the highest value in each row, with the darker shading indicating the highest value.

Activity	Less than 30 minutes	Between 30 minutes and 1 hour	1-2 hours	2-3 hours	3-4 hours	4 hours +	Total
Dog walking	25 (9)	136 (51)	79 (30)	20 (7)	3 (1)	4 (1)	267 (100)
Walking	14 (7)	51 (26)	89 (45)	28 (14)	6 (3)	10 (5)	198 (100)
Cycling/Mountain Biking	1 (2)	8 (15)	18 (35)	12 (23)	10 (19)	3 (6)	52 (100)
Running	1 (3)	11 (31)	18 (51)	4 (11)	1 (3)	0 (0)	35 (100)
Outing with family	1 (4)	6 (26)	7 (30)	5 (22)	3 (13)	1 (4)	23 (100)
Enjoying scenery / fresh air	0 (0)	1 (6)	11 (61)	4 (22)	1 (6)	1 (6)	18 (100)
Visiting cafe/visitor centre	0 (0)	4 (44)	4 (44)	1 (11)	0 (0)	0 (0)	9 (100)
Bird/Wildlife watching	1 (13)	2 (25)	3 (38)	1 (13)	0 (0)	1 (13)	8 (100)
Picnic	0 (0)	1 (25)	1 (25)	0 (0)	1 (25)	1 (25)	4 (100)
Photography	1 (33)	1 (33)	0 (0)	1 (33)	0 (0)	0 (0)	3 (100)
Formal sports	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)	3 (100)
Horse riding	0 (0)	0 (0)	3 (100)	0 (0)	0 (0)	0 (0)	3 (100)
Meeting up with friends	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)
Other	8 (22)	10 (28)	8 (22)	6 (17)	0 (0)	4 (11)	36 (100)
Total	52 (8)	231 (35)	245 (37)	82 (12)	25 (4)	25 (4)	660 (100)

Time of day (Q5)

4.10 Many interviewees (35%) did not have a specific time of day that they tended to visit, while a further 7% were on their first visit. For those interviewees that did specify a time, the most frequently cited period was between 7am and 10am (30% of interviewees) (Table 6).

Time of year (Q6)

4.11 Most interviewees (68%) stated they visited equally all year round, rather than in any one particular season or time of year. For those that did give a

particular time of year, summer (22%) was the most common response (Table 7).

Table 6: Number (%) of interviewees and time of day they tend to visit (from Q5). Grey shading indicates the highest value in each row, with the darker shading indicating the highest value. Interviewees could indicate more than one time of day and therefore %s do not add up to 100.

Activity	Before 7am	7am - 10am	10am - 2pm	2pm - 4 pm	4pm - 6pm	After 6pm	Varies / don't know	First visit	Total
Dog walking	22 (8)	109 (41)	63 (24)	26 (10)	29 (11)	45 (17)	89 (33)	7 (3)	267 (100)
Walking	3 (2)	33 (17)	44 (22)	35 (18)	26 (13)	15 (8)	69 (35)	28 (14)	198 (100)
Cycling/Mountain Biking	1 (2)	16 (31)	15 (29)	7 (13)	5 (10)	2 (4)	19 (37)	3 (6)	52 (100)
Running	3 (9)	19 (54)	5 (14)	1 (3)	1 (3)	3 (9)	9 (26)	1 (3)	35 (100)
Outing with family	0 (0)	2 (9)	4 (17)	7 (30)	3 (13)	0 (0)	11 (48)	4 (17)	23 (100)
Enjoying scenery / fresh air	0 (0)	0 (0)	4 (22)	5 (28)	4 (22)	2 (11)	8 (44)	1 (6)	18 (100)
Visiting cafe/visitor centre	0 (0)	1 (11)	5 (56)	0 (0)	0 (0)	0 (0)	4 (44)	0 (0)	9 (100)
Bird/Wildlife watching	0 (0)	1 (13)	0 (0)	1 (13)	2 (25)	0 (0)	5 (63)	0 (0)	8 (100)
Picnic	0 (0)	0 (0)	2 (50)	2 (50)	2 (50)	0 (0)	2 (50)	0 (0)	4 (100)
Photography	1 (33)	2 (67)	1 (33)	1 (33)	1 (33)	0 (0)	1 (33)	0 (0)	3 (100)
Formal sports	1 (33)	1 (33)	2 (67)	1 (33)	1 (33)	0 (0)	0 (0)	0 (0)	3 (100)
Horse riding	1 (33)	2 (67)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)
Meeting up with friends	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	1 (100)
Other	2 (6)	11 (31)	7 (19)	7 (19)	8 (22)	3 (8)	15 (42)	2 (6)	36 (100)
Total	34 (5)	197 (30)	153 (23)	93 (14)	82 (12)	70 (11)	233 (35)	46 (7)	660 (100)

Table 7: Number (%) of interviewees and time of year they tend to visit (from Q6). Grey shading indicates the highest value in each row, with the darker shading indicating the highest value. Interviewees could indicate more than one time of day and therefore %s do not add up to 100.

Activity	Spring (Mar-May)	Summer (Jun-Aug)	Autumn (Sept-Nov)	Winter (Dec-Feb)	Equally all year	Don't know/ first visit	Total
Dog walking	12 (4)	34 (13)	11 (4)	1 (0)	220 (82)	10 (4)	267 (100)
Walking	17 (9)	49 (25)	16 (8)	1 (1)	117 (59)	29 (15)	198 (100)
Cycling/Mountain Biking	9 (17)	19 (37)	7 (13)	0 (0)	32 (62)	2 (4)	52 (100)
Running	3 (9)	8 (23)	3 (9)	2 (6)	24 (69)	2 (6)	35 (100)
Outing with family	1 (4)	3 (13)	2 (9)	0 (0)	14 (61)	5 (22)	23 (100)
Enjoying scenery / fresh air	1 (6)	10 (56)	2 (11)	0 (0)	7 (39)	1 (6)	18 (100)
Visiting cafe/visitor centre	2 (22)	4 (44)	1 (11)	1 (11)	4 (44)	0 (0)	9 (100)
Bird/Wildlife watching	2 (25)	4 (50)	4 (50)	0 (0)	2 (25)	0 (0)	8 (100)
Picnic	0 (0)	2 (50)	0 (0)	0 (0)	3 (75)	0 (0)	4 (100)
Photography	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	3 (100)
Formal sports	1 (33)	0 (0)	1 (33)	1 (33)	2 (67)	0 (0)	3 (100)
Horse riding	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	3 (100)
Meeting up with friends	1 (100)	1 (100)	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)
Other	3 (8)	12 (33)	7 (19)	2 (6)	20 (56)	2 (6)	36 (100)
Total	52 (8)	146 (22)	55 (8)	8 (1)	451 (68)	51 (8)	660 (100)

Length of time visiting (Q7)

4.12 The majority (59%) of interviewees had been visiting for more than 10 years (Table 8). The number of interviewees who had been visiting for less than or approximately 6 months was 11 (2%) and a further 33 (5%) indicated they didn't know or were on their first visit.

Table 8: Number (%) of interviewees and length of time visiting (from Q7) by activity. Grey shading indicates the highest value in each row, with the darker shading indicating the highest value.

Activity	Less than or approx. 6 months	Less than or approx. 1 year	Less than or approx. 3 years	Less than or approx. 5 years	Less than or approx. 10 years	More than 10 years	First visit/ don't know	Total
Dog walking	8 (3)	10 (4)	26 (10)	28 (10)	29 (11)	162 (61)	4 (1)	267 (100)
Walking	4 (2)	11 (6)	18 (9)	21 (11)	15 (8)	108 (55)	23 (12)	200 (100)
Cycling/Mountain Biking	0 (0)	4 (8)	6 (12)	4 (8)	1 (2)	36 (69)	1 (2)	52 (100)
Running	1 (3)	3 (9)	6 (17)	3 (9)	3 (9)	19 (54)	0 (0)	35 (100)
Outing with family	0 (0)	1 (4)	0 (0)	6 (26)	2 (9)	10 (43)	4 (17)	23 (100)
Enjoying scenery / fresh air	0 (0)	0 (0)	1 (6)	2 (11)	4 (22)	10 (56)	1 (6)	18 (100)
Visiting cafe/visitor centre	0 (0)	0 (0)	1 (11)	2 (22)	0 (0)	6 (67)	0 (0)	9 (100)
Bird/Wildlife watching	0 (0)	2 (25)	0 (0)	0 (0)	1 (13)	5 (63)	0 (0)	8 (100)
Picnic	0 (0)	0 (0)	0 (0)	0 (0)	3 (75)	1 (25)	0 (0)	4 (100)
Photography	0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	2 (67)	0 (0)	3 (100)
Formal sports	0 (0)	0 (0)	1 (33)	0 (0)	1 (33)	1 (33)	0 (0)	3 (100)
Horse riding	0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	2 (67)	0 (0)	3 (100)
Meeting up with friends	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	1 (100)
Other	0 (0)	0 (0)	4 (11)	3 (8)	2 (6)	25 (69)	2 (6)	36 (100)
Total	11 (2)	31 (5)	63 (10)	69 (10)	63 (10)	388 (59)	33 (5)	660 (100)

4.13 The length of time visiting is summarised by access point in Figure 1. Connaught Water and Buckhurst Cricket Ground were locations with relatively high proportions of visitors who have been visiting for more than 5 years.

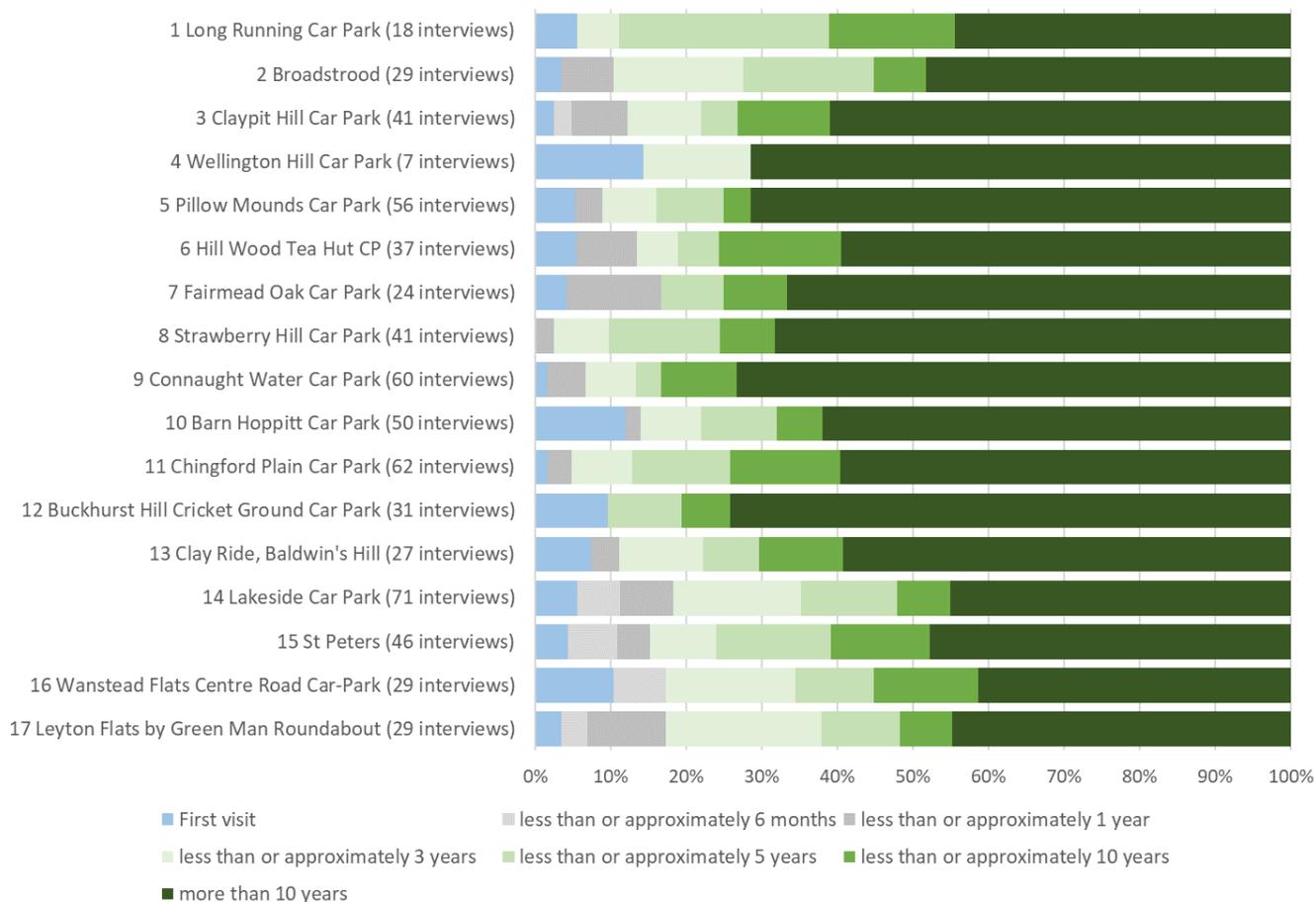


Figure 1: % of interviewees and length of time visiting by survey point

Mode of transport (Q8-9)

4.14 Two-thirds (66%) of interviewees arrived by car/van and a further 25% arrived on foot (Table 9). Table 9 includes an 'Other' mode of transport (1% interviewees, 7 interviewees). These were motorbike (4 interviewees), mobility scooter (2 interviewees) and horseback (1 interviewee).

Table 9: Number (%) of interviewees and mode of transport (from Q8) by activity. Grey shading indicates the highest value in each row, with the darker shading indicating the highest value. Interviewees could give more than one mode of transport, so percentages are based on the number of interviewees who answered the question rather than number of responses.

Activity	Car / van	On foot	Train (mainline)	Tube	Bus	Bicycle	Other	Respondents
Dog walking	184 (69)	82 (31)	0 (0)	0 (0)	2 (1)	0 (0)	0 (0)	265 (100)
Walking	120 (62)	51 (26)	4 (2)	11 (6)	7 (4)	1 (1)	3 (2)	195 (100)
Cycling/Mountain Biking	27 (52)	0 (0)	0 (0)	0 (0)	0 (0)	25 (48)	0 (0)	52 (100)
Running	19 (54)	15 (43)	0 (0)	0 (0)	0 (0)	2 (6)	0 (0)	35 (100)
Outing with family	20 (87)	2 (9)	0 (0)	0 (0)	1 (4)	0 (0)	0 (0)	23 (100)
Enjoying scenery / fresh air	14 (78)	2 (11)	1 (6)	0 (0)	1 (6)	0 (0)	1 (6)	18 (100)
Visiting cafe/visitor centre	9 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9 (100)
Bird/Wildlife watching	6 (75)	2 (25)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	8 (100)
Picnic	3 (75)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (25)	4 (100)
Photography	3 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)
Formal sports	1 (33)	2 (67)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)
Horse riding	2 (67)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	3 (100)
Meeting up with friends	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
Other	23 (66)	9 (26)	2 (6)	0 (0)	2 (6)	0 (0)	0 (0)	35 (100)
Total	431 (66)	165 (25)	7 (1)	11 (2)	13 (2)	28 (4)	7 (1)	654 (100)

- 4.15 For those 11 interviewees who had arrived by tube, the majority (9 interviewees) had used Loughton station, with the remaining two having used Theydon Bois and Wanstead stations.
- 4.16 Comparing across different survey locations (Figure 2), Leyton Flats and Wellington Hill were the two locations with the least car-use (2 interviewees arriving by car at each). There were six locations (out of the 17) where less than 50% of interviewees had arrived by car, i.e. six locations where at least half of interviewees had used other forms of transport. Connaught Water was notable in that virtually all travel was by car (95% of interviewees).

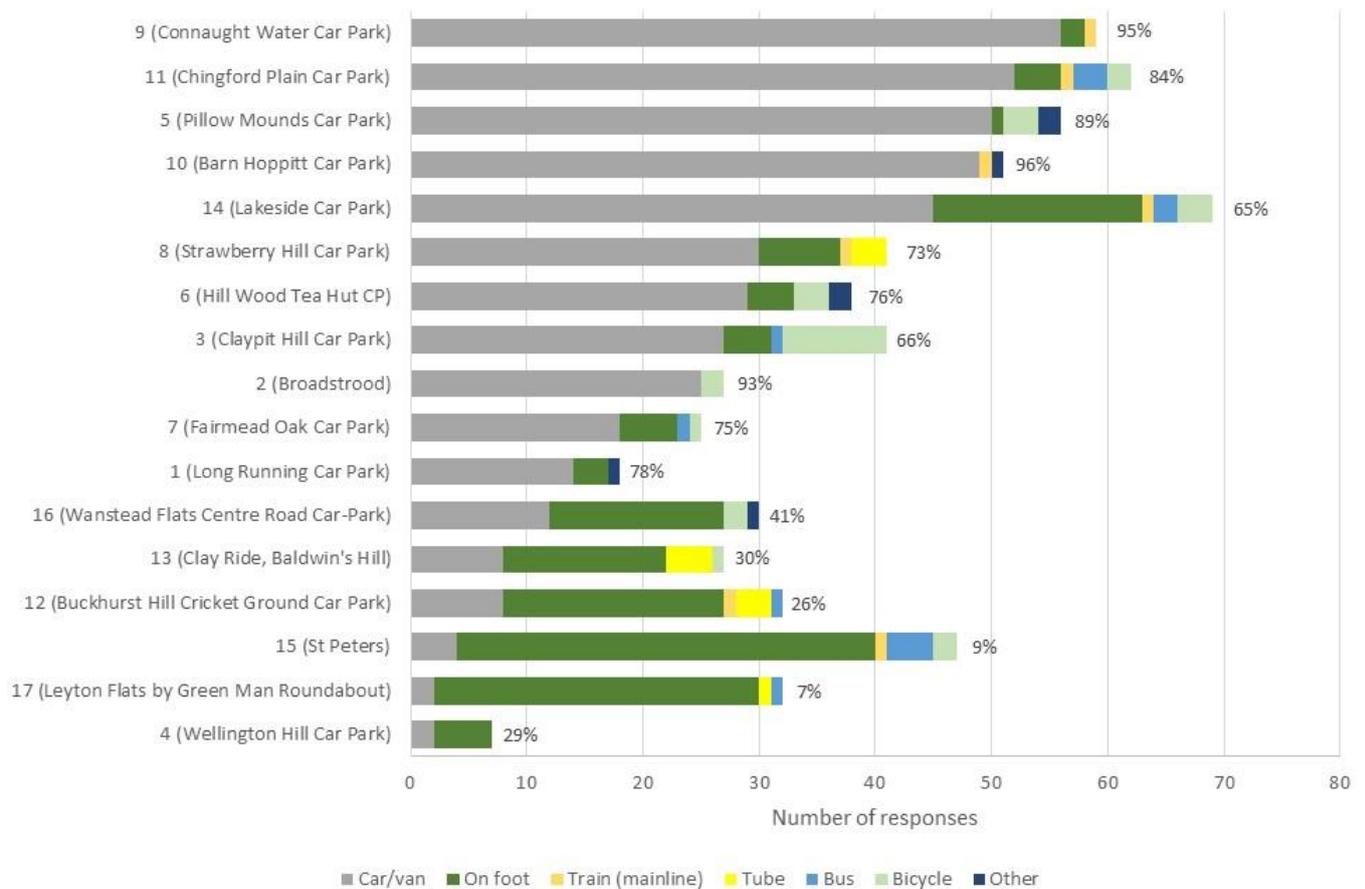


Figure 2: Number of interviewee responses relating to mode of transport, by survey point. The labels at the end of each bar reflect the percentage of people interviewed at each location who stated they had travelled by car.

Visitor routes (Q10-11)

4.18 Nearly two-thirds of interviewees (62%) indicated that their route was their normal length and a further 21% didn't have a normal route or weren't sure. For 15% of interviewees the route length was much shorter than normal and for 2% it was much longer than normal.

4.19 Factors that influenced the choice of route are summarised in Figure 3. The most common response (34% of interviewees) related to previous knowledge of the area/experience, for example people following their 'usual' route.

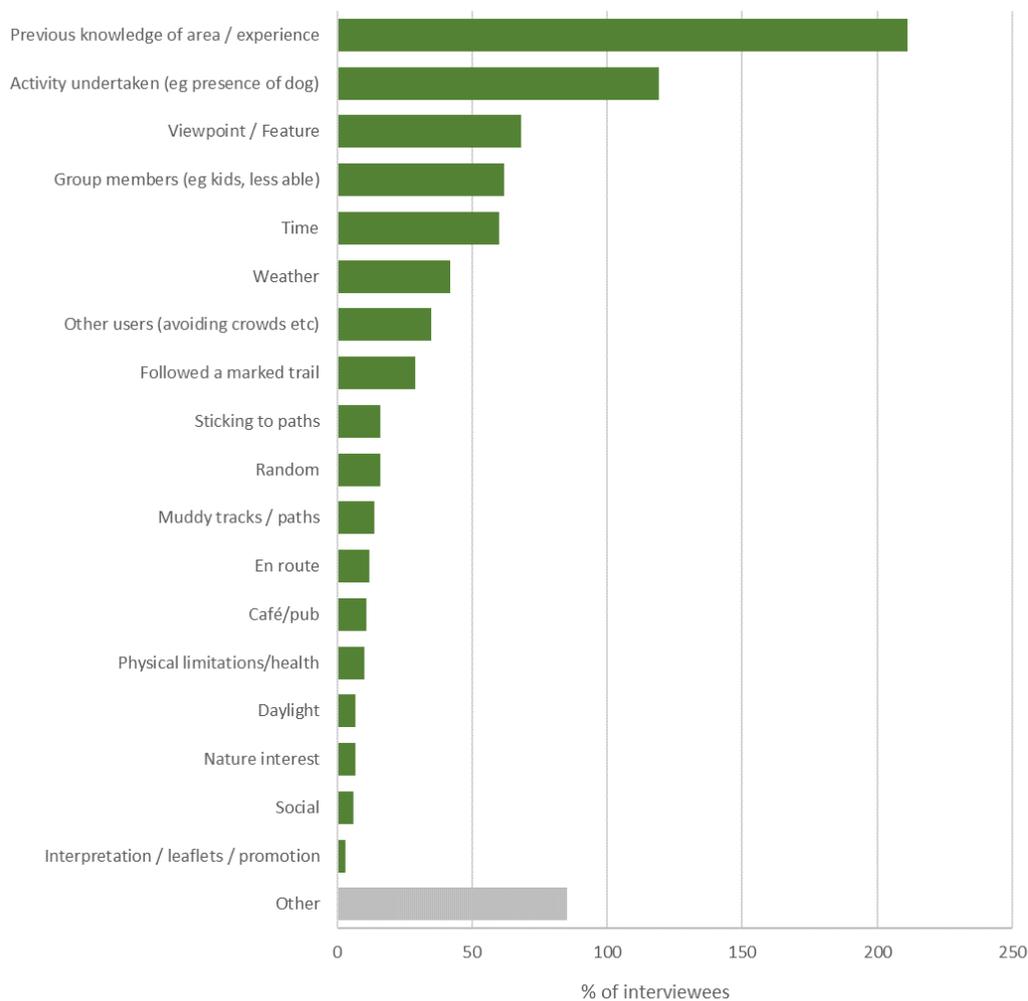


Figure 3: Factors affecting choice of route (from Q11). Figure derived from pre-determined categories and additional categories derived from free text responses. En-route relates to people commuting, visiting shops, hospital etc; Social relates to responses involving meeting friends or route choices that would mean meeting other people; Nature interest includes foraging (e.g. blackberry picking).

- 4.20 A total of 650 routes were mapped and these are shown in Map 5. Surveyors focussed on recording the routes inside the SAC, but as far as possible routes were also mapped outside the SAC boundary, for example when someone was walking from their home. For some cycle routes or even long-distance walks (one interviewee was walking an 18 mile circuit that included the Roding Valley) plotting all components was not always possible.
- 4.21 It is important to note that the routes do not of course reflect overall footfall across the whole SAC as only a selection of entry points were surveyed. The routes therefore show where people who visit the survey points actually went. It can be seen that the data show a high-density of routes around the southern parts of the SAC (Barn Hoppitt, Chingford Plain and Leyton Flats).
- 4.22 Across all interviewees and including sections of routes outside the site boundary, the median route length was 2,571m. The median for routes truncated within the SAC boundary and Wanstead Flats boundary (the latter as defined using the Corporation of London ownership) was 1,989m.
- 4.23 In Map 6 we show the density of routes, based on a grid of 100m cells over the SAC and Wanstead Flats. The shading in each cell reflects the number of routes that intersect each cell, with the two panels showing all routes (left panel) and dog walkers only (i.e. the most common single activity type, shown in the right panel). The dog walker map indicates that dog walking routes – at least from the surveyed locations – do seem to be concentrated in the Chingford Plain area and at Wanstead Flats.
- 4.24 There were marked, significant differences between activities in the lengths of routes recorded (Figure 4) (Kruskal-Wallis $H=182.28$, 4 d.f., $p<0.001$). The median route length for dog walkers was 2.34km, for walkers it was 2.99km, for cyclists (including mountain bikers) it was 10.84km, for runners it was 5.32km and for all other interviewees it was 1.26km. The longest route recorded was by a walker, with the route as mapped nearly 33km.

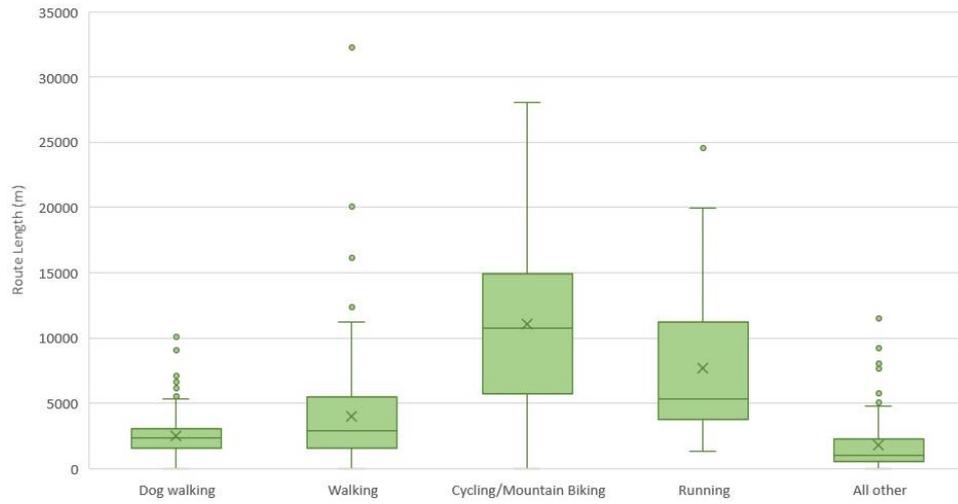
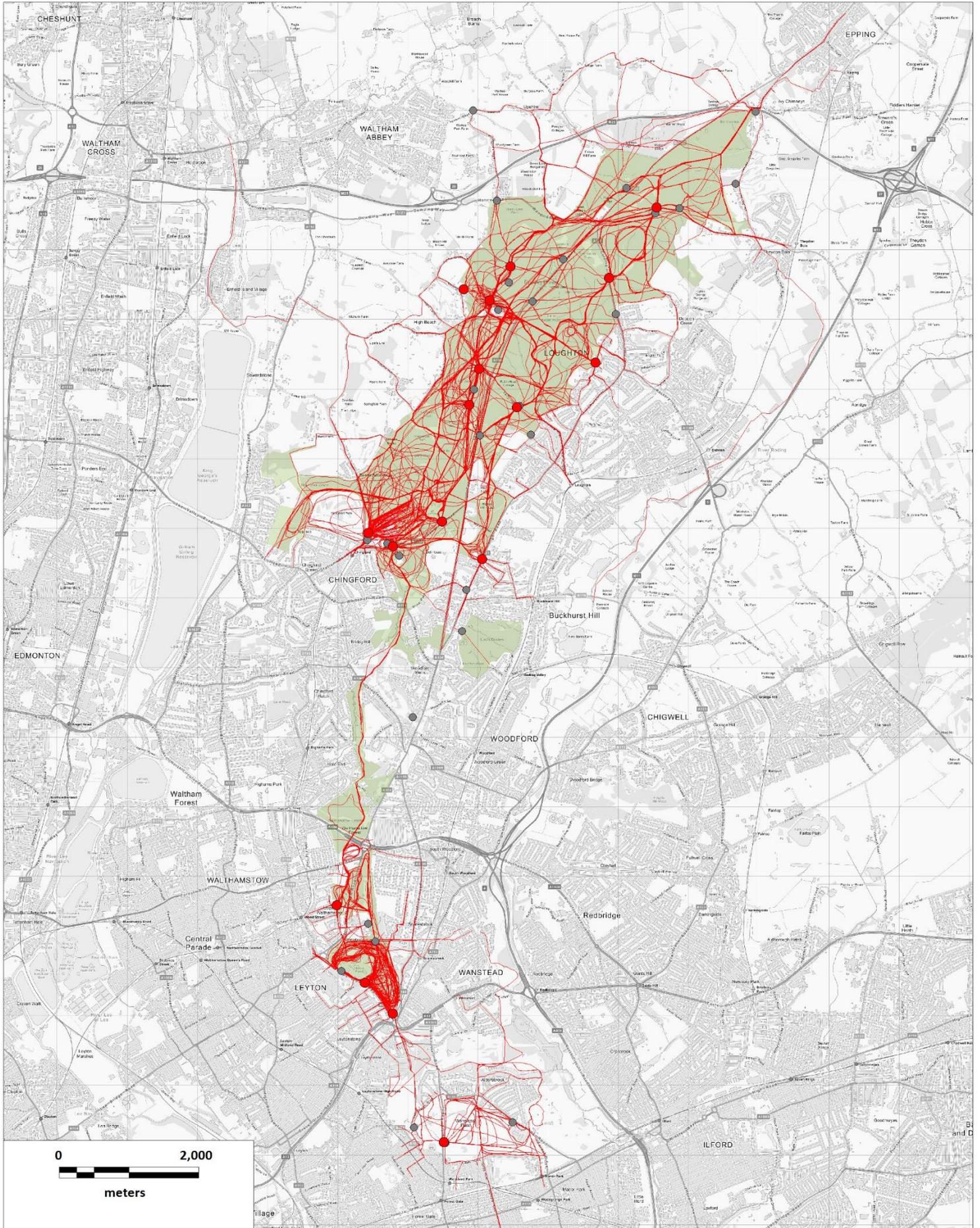


Figure 4: Box plot showing route length by activity (route lengths as mapped including sections outside the SAC).

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Map 5: Visitor routes

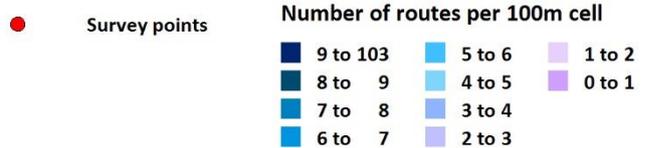
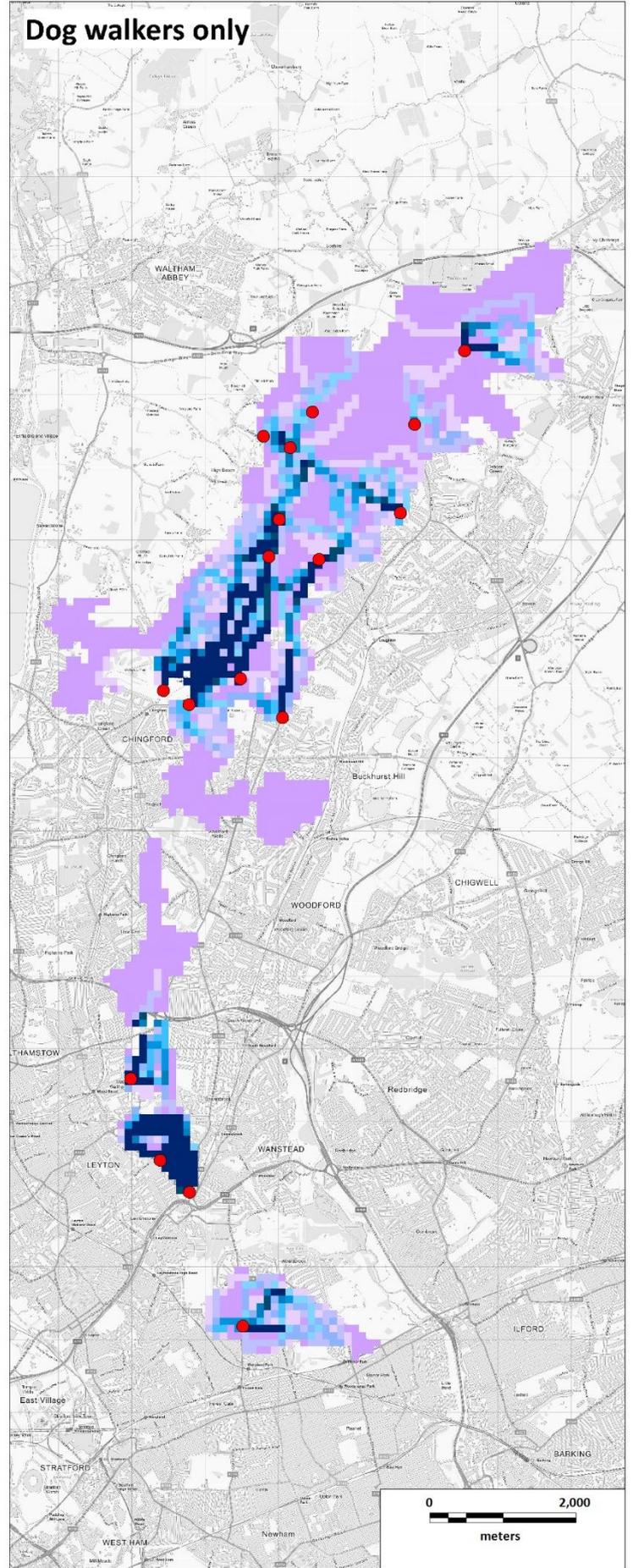
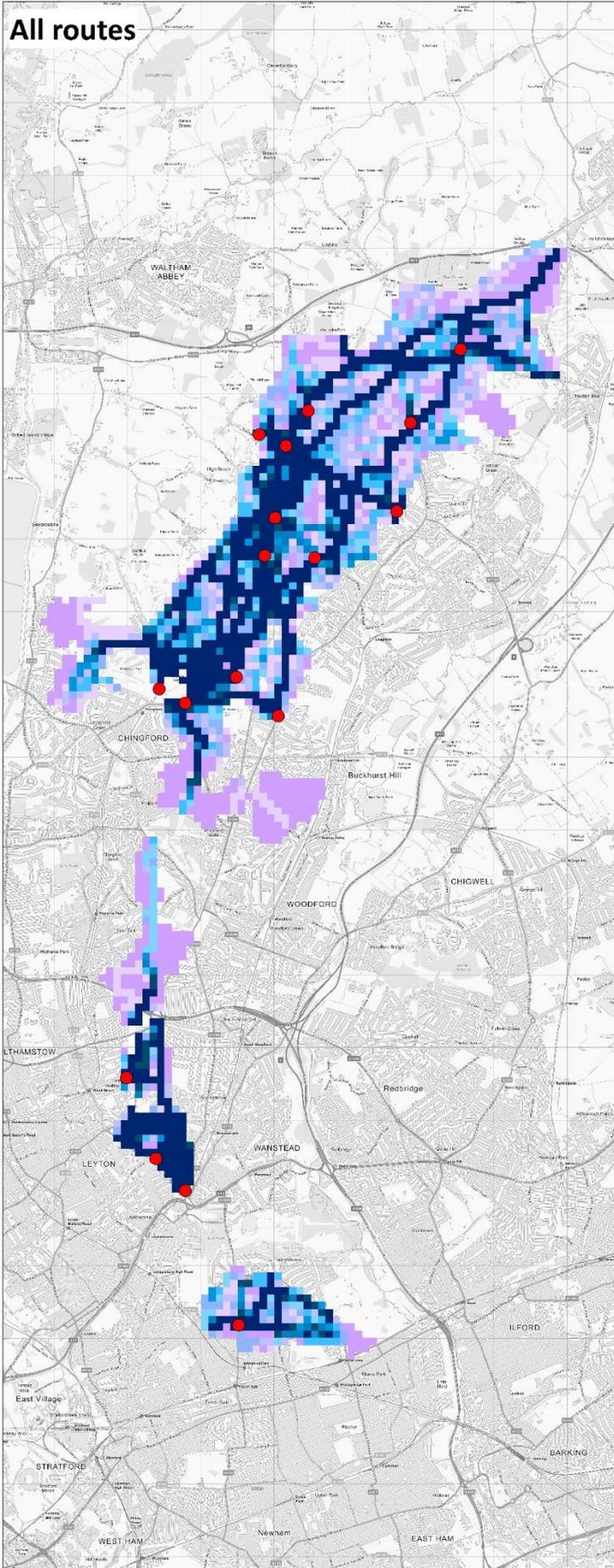


 Epping Forest SAC

-  Survey points
-  Other (unsurveyed) CoL car-parks

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Map 6: Route density on 100m grid



Choice of location (Q12)

- 4.25 Interviewees' reasons for choosing the specific location where interviewed (rather than another local site) are summarised in Figure 5. Responses were categorised by the surveyor and multiple reasons could be recorded for each interview (e.g. an interviewee might choose a site because it is close to home and has easy parking). Interviewees were asked which single reason had the most influence over their choice of site.
- 4.26 Close to home (or other accommodation or work etc.) was by far the most common response, cited by 33% of interviewees overall. It was also very clearly the most commonly cited main reason (Figure 5). Other factors cited by at least 10% of interviewees related to habit/familiarity (17%), to the presence of refreshments nearby (12%) and to the scenery/variety of views (14%). Notably, the scenery was the most commonly cited 'other' reason (9%) of interviewees, indicating that the scenery was important to many, but as a secondary consideration rather than the main influence.

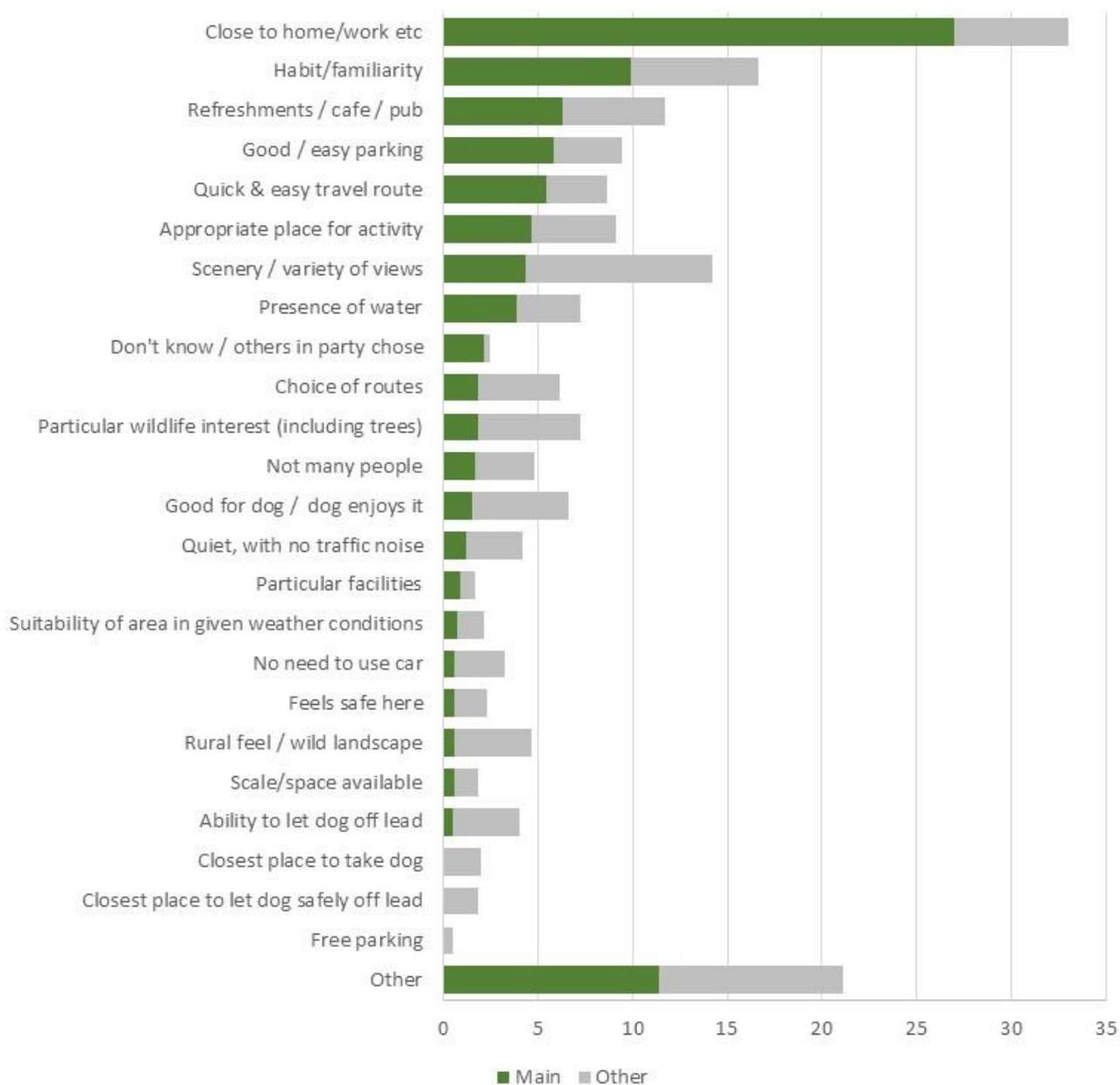


Figure 5: Factors affecting choice of site (from Q12). Figure derived from pre-determined categories and additional categories derived from free text responses. Factors are ranked by main.

Other sites visited (Q14-16)

4.27 Interviewees showed a strong affinity to Epping Forest for their recreation use. Overall, 31% of interviewees indicated that all of their visits (for the given activity) took place at Epping Forest while a further 30% indicated that 75% or more of their visits took place at Epping Forest (Table 10).

Table 10: Number (%) of interviewees and rough percentage of weekly visits (for given activity) that take place at Epping Forest (from Q14), by activity. Grey shading indicates the highest value in each row, with the darker shading indicating the highest value.

Activity	less than 25%	25-49%	50-74%	75% or more	All take place here	Not sure/don't know/first visit	Total
Dog walking	28 (11)	8 (3)	37 (14)	81 (31)	101 (38)	9 (3)	264 (100)
Walking	25 (13)	10 (5)	24 (13)	57 (30)	47 (25)	28 (15)	191 (100)
Cycling/Mountain Biking	7 (14)	5 (10)	8 (16)	18 (35)	9 (18)	4 (8)	51 (100)
Running	3 (9)	2 (6)	5 (15)	11 (32)	12 (35)	1 (3)	34 (100)
Outing with family	5 (23)	3 (14)	2 (9)	4 (18)	3 (14)	5 (23)	22 (100)
Enjoying scenery / fresh air	6 (33)	2 (11)	2 (11)	5 (28)	2 (11)	1 (6)	18 (100)
Visiting cafe/visitor centre	1 (13)	1 (13)	0 (0)	4 (50)	2 (25)	0 (0)	8 (100)
Bird/Wildlife watching	0 (0)	0 (0)	1 (13)	4 (50)	3 (38)	0 (0)	8 (100)
Picnic	0 (0)	0 (0)	0 (0)	3 (75)	1 (25)	0 (0)	4 (100)
Photography	1 (33)	0 (0)	0 (0)	1 (33)	0 (0)	1 (33)	3 (100)
Formal sports	0 (0)	0 (0)	0 (0)	1 (33)	2 (67)	0 (0)	3 (100)
Horse riding	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)	0 (0)	3 (100)
Meeting up with friends	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	1 (100)
Other	2 (6)	2 (6)	5 (14)	7 (19)	17 (47)	3 (8)	36 (100)
Total	78 (12)	33 (5)	84 (13)	196 (30)	203 (31)	52 (8)	646 (100)

4.28 Across the different survey points, locations where a high percentage of interviewees indicated all their visits took place were St Peters (51% interviewees with all their visits at the given location), Wanstead Flats (48%), Broadstroad (45%) and Wellington Hill (43%) (Figure 6).

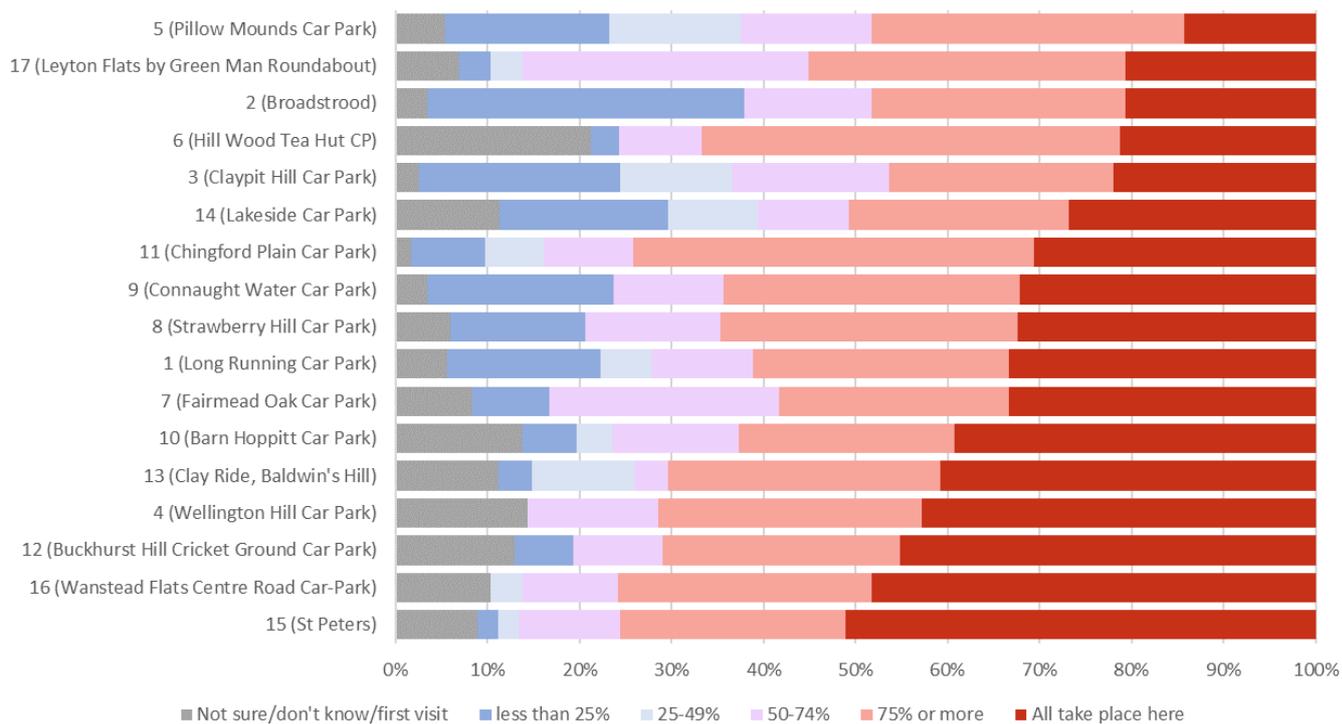


Figure 6: Percentage of interviewees and proportion of visits taking place (for given activity) at each survey location (from Q14). Locations ranked by the 'all take place here' category.

4.29 Interviewees were asked to name up to three other sites they also visited besides Epping Forest. In total, 411 (62%) named another site or sites that they visited. The other interviewees did not visit other locations. The list of named alternatives was reviewed and recoded as relevant to give consistent site names, for example 'Hatfield' and 'Hatfield Forest' were considered to relate to the same location and all coded as 'Hatfield Forest'. Similarly, 'Hainault', 'Hainault Country Park' and 'Hainault Forest' were treated as the same location and coded 'Hainault'.

4.30 The most commonly named locations are shown in Figure 7. The plot does not include sites within Epping Forest⁶ and all those named by at least 4 interviewees are included. It can be seen that Wanstead (i.e. Wanstead Flats, Wanstead Park etc.) was by far the most commonly cited alternative, followed by the Lee Valley Park. The range of sites included a number of

⁶ While the question wording was specific to ask for locations beside Epping Forest, sites such as Connaught Water (13 interviewees), Hollow Ponds (9 interviewees) and High Beach (9 interviewees) were still cited, it is likely these were thought to be outside the Forest by some.

local sites and a range of different greenspaces, including some other SSSIs and European sites. Some alternative locations such as the New Forest and Thetford Forest are some considerable distance.

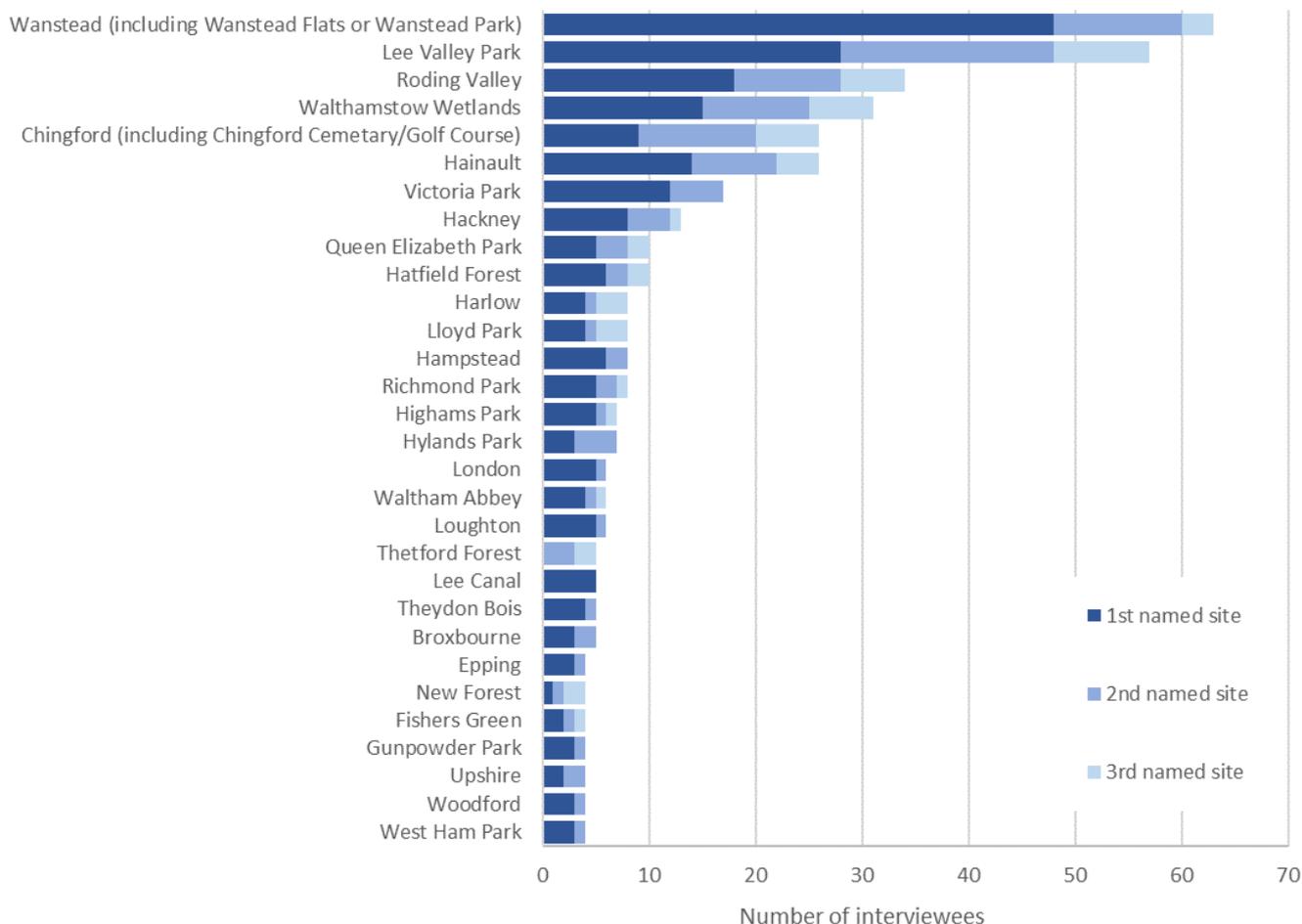


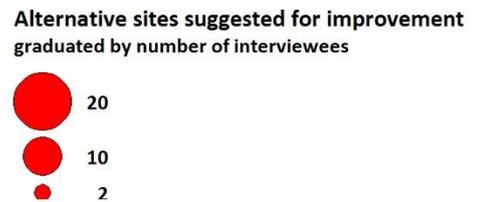
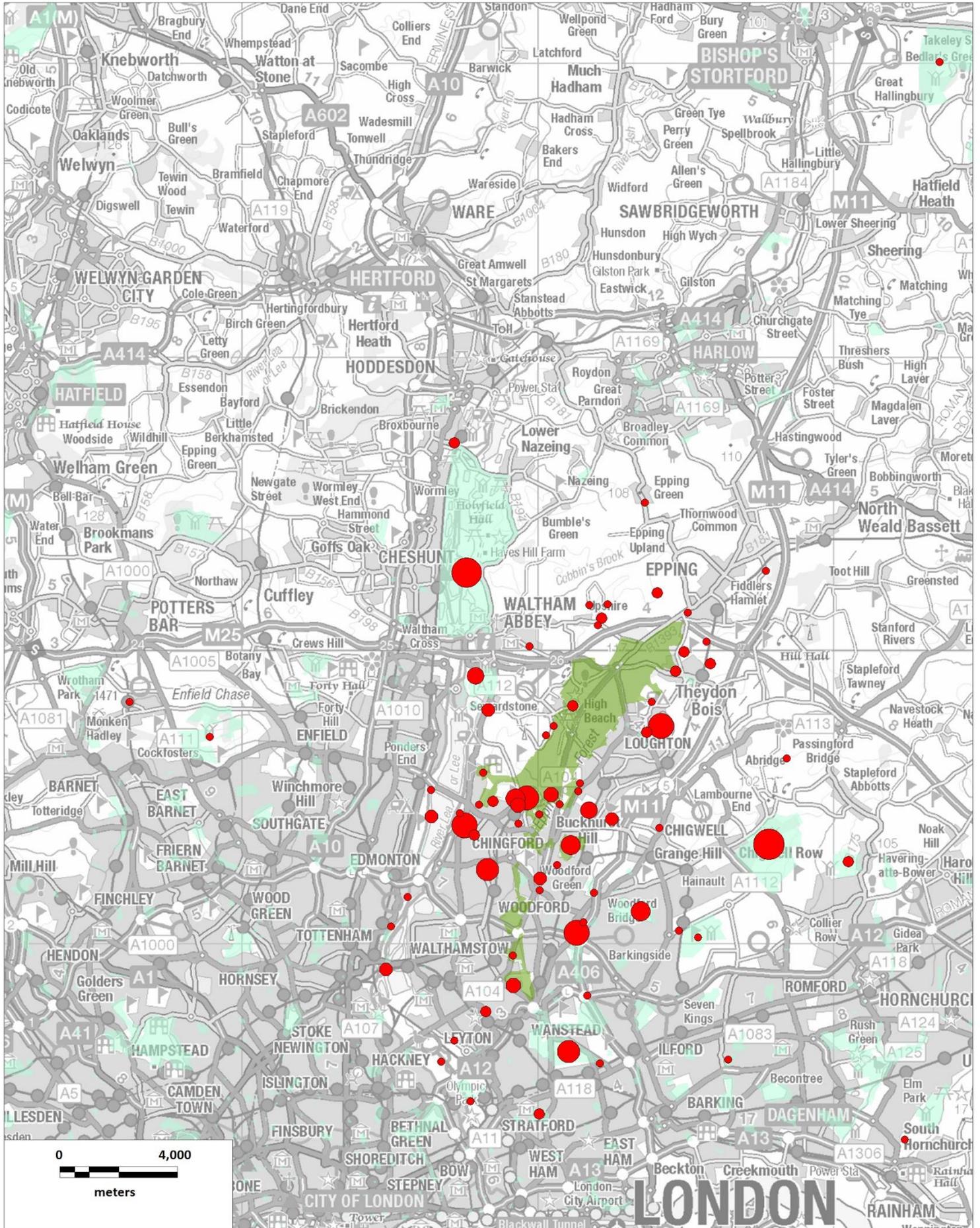
Figure 7: Numbers of interviewees and other sites visited. Interviewees could name up to three other locations, with the one they visit most given first. All sites named by at least 4 interviewees are shown, with the exception of any within Epping Forest.

Local greenspace sites that could be improved (Q17)

4.31 In total, 29% of interviewees were able to identify local greenspace sites that could be improved for access and work as an alternative destination away from Epping Forest. Just over 70 different locations were identified that could be mapped, and these are shown on Map 7, where the size of symbol reflects how many interviewees named that location. Sites were not always easy to map or find, and the points are indicative, but reflect the broad range

of locations. They ranged as far away as Hatfield Forest but were predominantly close to Epping Forest and key locations included Lee Valley, Hainault, and the Chingford area including Chingford Plain and the Golf Course.

- 4.32 Improvements that were suggested for sites are summarised in Figure 8 and all suggestions, listed by site, are given in Appendix 2. The list of sites that were mapped and the number of times they were mentioned is provided in Appendix 3.
- 4.33 Suggestions for improvements predominantly related to removal of parking charges, issues with safety, fly tipping and dog mess, a need for better paths/path surfacing and the provision of refreshments. It is important to note that many of the sites identified by interviewees are themselves within the SAC or on sites which also have ecological designations. Consequently, whilst the full list of sites has been shown on Map 7 (and included in Appendix 2), not all of these are necessarily appropriate to pursue as alternative destinations for mitigation purposes.



Interviewee use of existing visitor centres (Q20) and interaction with rangers (Q21)

4.34 Well over a third (38%) of interviewees stated they had visited one of the visitor centres at Epping Forest over the past year (Table 11). Barn Hoppitt (63% of interviewees) and Chingford Plain (56%) were the survey locations with the highest percentage of interviewees who had visited a visitor centre over the past year (Figure 9).

Table 11: Number (%) of interviewees that have visited one of the visitor centres at Epping Forest.

Activity	Yes	Don't know	No	Total interviewees
Dog walking	90 (35)	1 (0)	169 (65)	260 (100)
Walking	78 (40)	1 (1)	114 (59)	193 (100)
Cycling/Mountain Biking	18 (35)	1 (2)	32 (63)	51 (100)
Running	12 (34)	0 (0)	23 (66)	35 (100)
Outing with family	7 (32)	0 (0)	15 (68)	22 (100)
Enjoying scenery / fresh air	4 (22)	0 (0)	14 (78)	18 (100)
Visiting cafe/visitor centre	8 (89)	0 (0)	1 (11)	9 (100)
Bird/Wildlife watching	3 (43)	0 (0)	4 (57)	7 (100)
Picnic	3 (75)	0 (0)	1 (25)	4 (100)
Photography	1 (33)	0 (0)	2 (67)	3 (100)
Formal sports	3 (100)	0 (0)	0 (0)	3 (100)
Horse riding	1 (50)	0 (0)	1 (50)	2 (100)
Other	15 (42)	0 (0)	21 (58)	36 (100)
Total	243 (38)	3 (0)	397 (62)	643 (100)

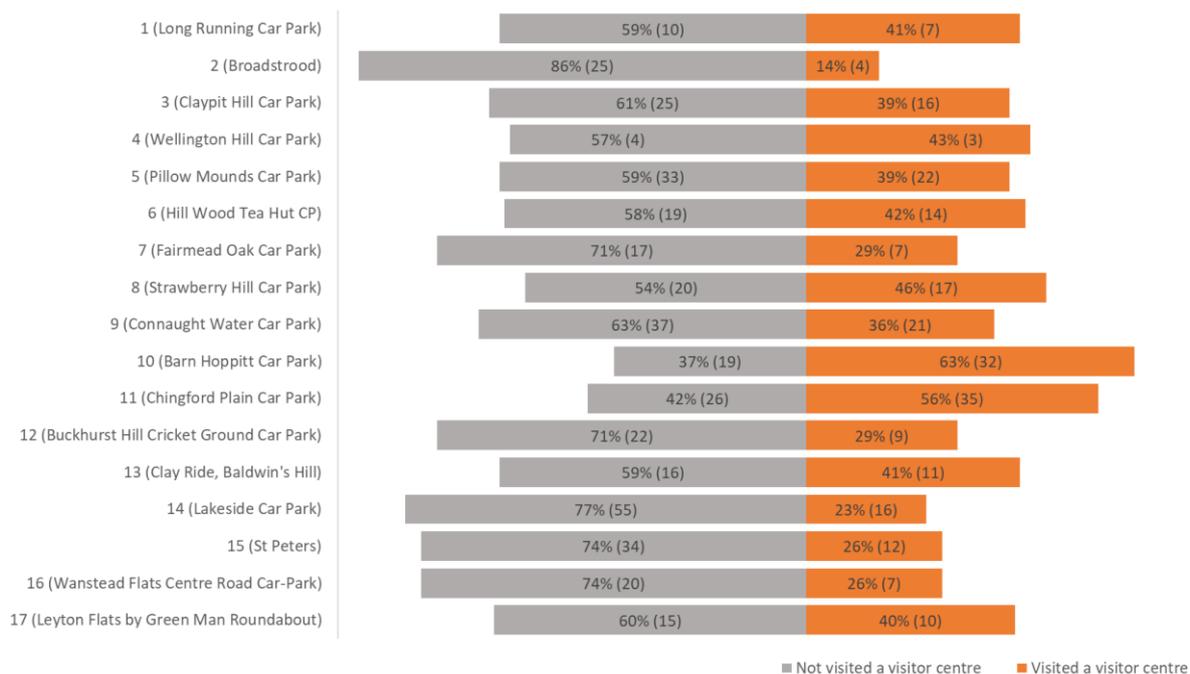


Figure 9: Percentage of interviewees who had (orange) or had not (grey) visited a visitor centre over the past year. Numbers in brackets are the number of interviewees. Those who weren't sure/didn't know are excluded from the plot.

4.35 Nearly a third (30%) of interviewees had had direct contact with a Corporation of London ranger or other staff member over the past year (Table 12). Among the more frequently recorded activities, cyclists were perhaps notable in that some 39% had spoken to a ranger over the past year. Comparing access points (Figure 10), a very high (71% of interviewees) at Wellington Hill had spoken to a ranger over the past year, however this is derived from a small sample of interviews as the location was little used. Aside from Wellington Hill, other locations with high percentages were Chingford Plain (45% spoken to a ranger over the past year) and Strawberry Hill (41%).

Table 12: Number (%) of interviewees that have spoken to one of the rangers or other Corporation of London staff in the past year.

Activity	Yes	Don't know	No	Total interviewees
Dog walking	87 (33)	0 (0)	173 (67)	260 (100)
Walking	49 (25)	1 (1)	143 (74)	193 (100)
Cycling/Mountain Biking	20 (39)	1 (2)	30 (59)	51 (100)
Running	10 (29)	0 (0)	25 (71)	35 (100)
Outing with family	2 (9)	0 (0)	20 (91)	22 (100)
Enjoying scenery / fresh air	3 (17)	0 (0)	15 (83)	18 (100)
Visiting cafe/visitor centre	3 (33)	0 (0)	6 (67)	9 (100)
Bird/Wildlife watching	3 (43)	0 (0)	4 (57)	7 (100)
Picnic	1 (25)	0 (0)	3 (75)	4 (100)
Photography	2 (67)	0 (0)	1 (33)	3 (100)
Formal sports	1 (33)	0 (0)	2 (67)	3 (100)
Horse riding	1 (50)	0 (0)	1 (50)	2 (100)
Other	9 (25)	0 (0)	26 (72)	35 (97)
Total	191 (30)	2 (0)	449 (70)	642 (100)

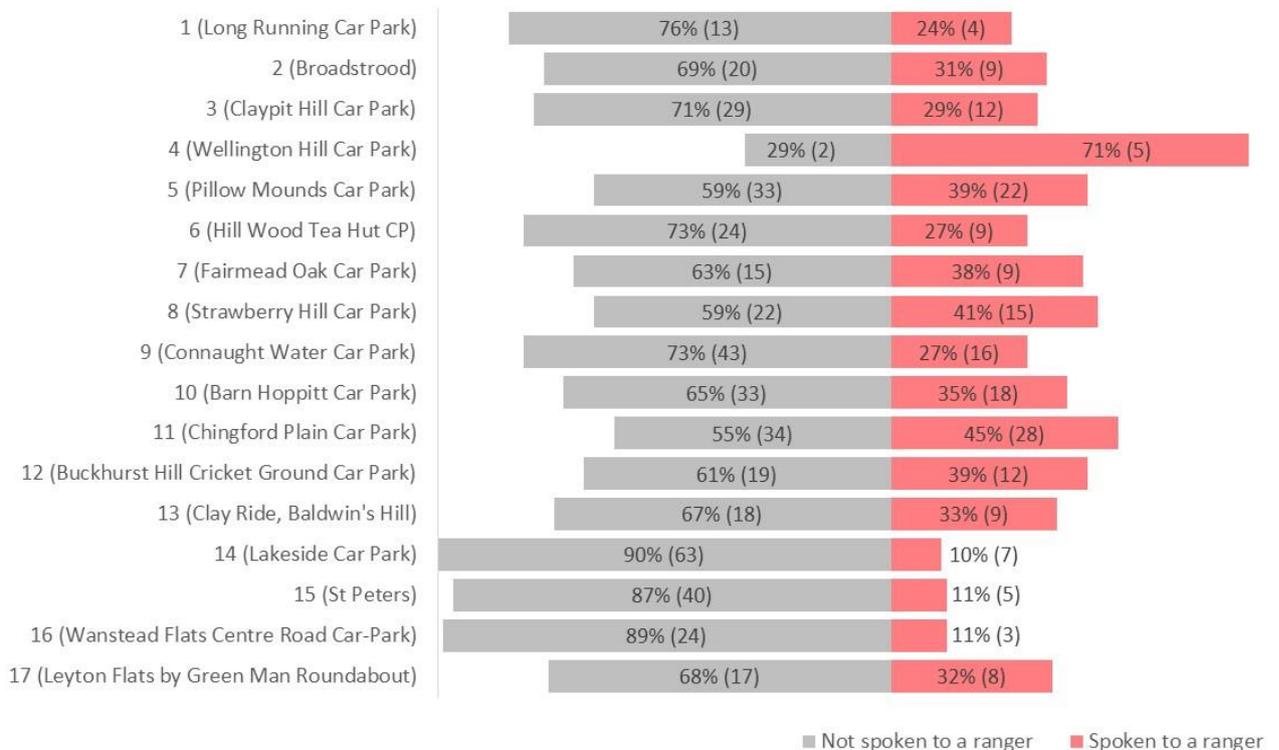


Figure 10: Percentage of interviewees who had (pale red) or had not (grey) spoken to a ranger or other staff member over the past year. Numbers in brackets are the number of interviewees. Those who weren't sure/didn't know are excluded from the plot.

Visitor origins (Q23)

- 4.36 In total, 595 interviewees gave full postcodes that could be matched to the national postcode database and accurately plotted within the GIS.
- 4.37 All visitor postcodes are shown in Map 8. Map 9 is focussed on the area around the SAC and shows postcode data by activity while Map 10 is identical except that the shading indicates visit frequency, with the intensity of the red shading indicating how frequently each interviewee visited.
- 4.38 Data for the distance between the interviewee's home postcode and the survey point are summarised in Table 13 for different groups of interviewees. We give both the mean and the median value in the table, however the medians better represent the typical distance from which people originate as the data contain a few large values (people that have come a very large distance) and these skew the mean values. The medians represent the distance at which half of visitors originated. Across all interviewees the median distance, as the crow flies, was 2.6km, i.e. half of interviewees lived within 2.6km of the location where interviewed. Dog walkers (median distance 1.84km) and daily visitors (median 1.72km) lived relatively close compared to other interviewees.
- 4.39 The third quartile (i.e. 75th percentile) is also a useful measure. This indicates how far most (75%) visitors live from the Epping Forest. The third quartile is often used as a means of representing a zone of influence for a site. For all interviewees combined the third quartile was 6.67km. For those interviewees travelling directly from home on a short visit (i.e. excluding holiday-makers etc.) the 75th percentile (all survey points) was 6.36km. One of the survey points (at Wanstead Flats) was outside the SAC, so excluding Wanstead Flats (SAC visitors only) and using the data for all interviewees, the third quartile was 6.81km. For those interviewed at the SAC survey points and that had travelled directly from home that day the 75th percentiles was 6.59km.

Table 13: Summary statistics for the distance (km) from the home postcode of the interviewee to the location where interviewed, measured as a straight-line distance ('as the crow flies'). Data are for different groups or types of interviewee. SAC survey points only is all locations excluding Wanstead Flats.

Grouping	N	Mean (\pm 1SE)	Min	Median	Q3	Max
All interviewees	595	7.03 \pm 0.97	0	2.60	6.67	435.26
Short visit from home	585	5.06 \pm 0.38	0	2.53	6.36	56.81
Dog walkers	254	4.85 \pm 1.24	0	1.84	3.88	287.93
Runners	29	3.69 \pm 0.73	0.27	2.26	4.57	15.84
Walkers	169	9.36 \pm 2.63	0	3.86	9.41	435.26
Cyclists	47	9.06 \pm 1.45	0.12	5.19	11.89	43.88
Daily visitors	150	2.40 \pm 0.24	0	1.72	3.47	17.69
Arrived by car/van	398	9.13 \pm 1.44	0.25	3.6	8.07	435.26
Arrived on foot	143	1.3 \pm 0.19	0	0.79	1.35	22.27
Wanstead Flats survey point	23	4.35 \pm 2.64	0.17	1.33	1.87	61.16
SAC survey points only (all interviewees)	572	7.13 \pm 1.01	0	2.77	6.81	435.26
SAC survey points, from home only	563	5.19 \pm 0.28	0.05	2.68	6.59	56.81

4.40 In Figure 11 we show the cumulative frequency distribution for the distances between the home postcodes of interviewees and the survey location. The plot highlights the high proportion of visitors originating close to the SAC, for example 9.6% of interviewees lived within 500m of the survey location and 18.5% lived within 1km.

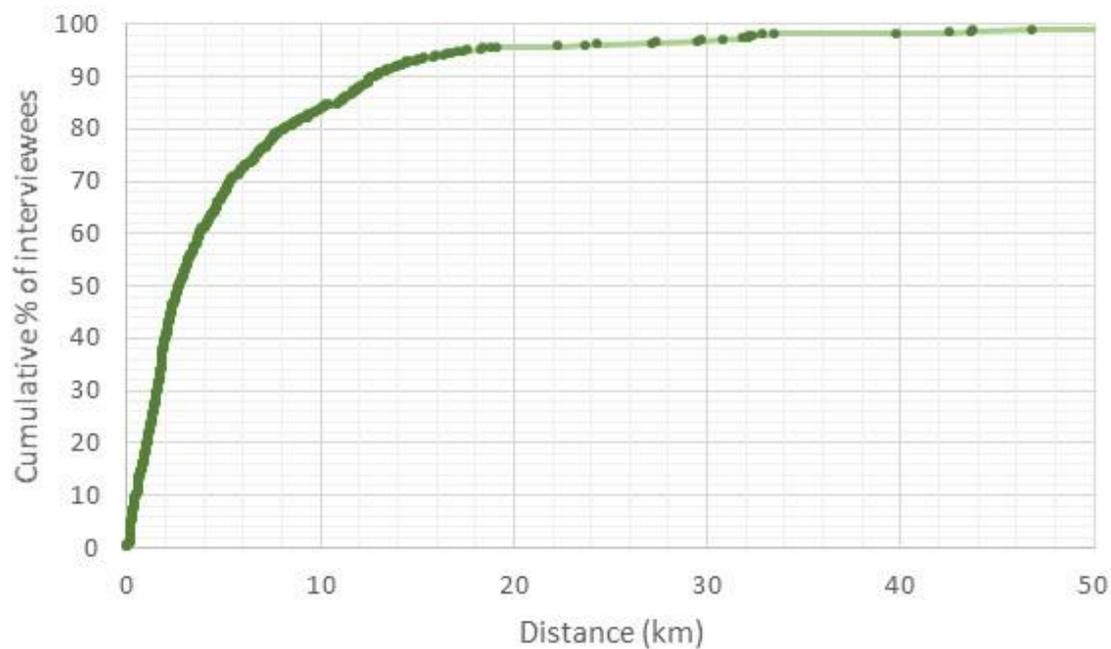


Figure 11: Cumulative % frequency of distances between the home postcode and survey location. Plot generated using data from all interviews at SAC survey points (i.e. excluding Wanstead Flats).

- 4.41 Map 11 shows the 75th percentile in two different ways. The solid red line is a buffer of 6.81km around the SAC boundary. The 6.81km figure represents the 75th percentile from all SAC survey points (all interviewees at those points) and we have then drawn the buffer around the SAC boundary. The dotted line represents a convex hull that encloses those interviewee postcodes that were within the 75th percentile, i.e. those postcodes within 6.81km from the location at which they were interviewed. A convex hull is a polygon that encloses a set of points in as simple a shape as possible. Equivalent to stretching an elastic band around a series of pins.
- 4.42 It can be seen that the convex hull broadly captures the area within which most of the frequent visitors originated, while the buffer drawn around the outside of the SAC covers a wider area, particularly to the north where it reaches Harlow. Both the convex hull and the SAC buffer stretch south as far as Bethnal Green.
- 4.43 Data by local planning authorities are shown in Figure 12. Over a third (35%) of all interviewees that gave a full valid postcode were residents of Waltham Forest, with a further 31% residents of Epping District. 12% of interviewees

came from Redbridge and then no other local authority contributed more than 5% of the interviewees.

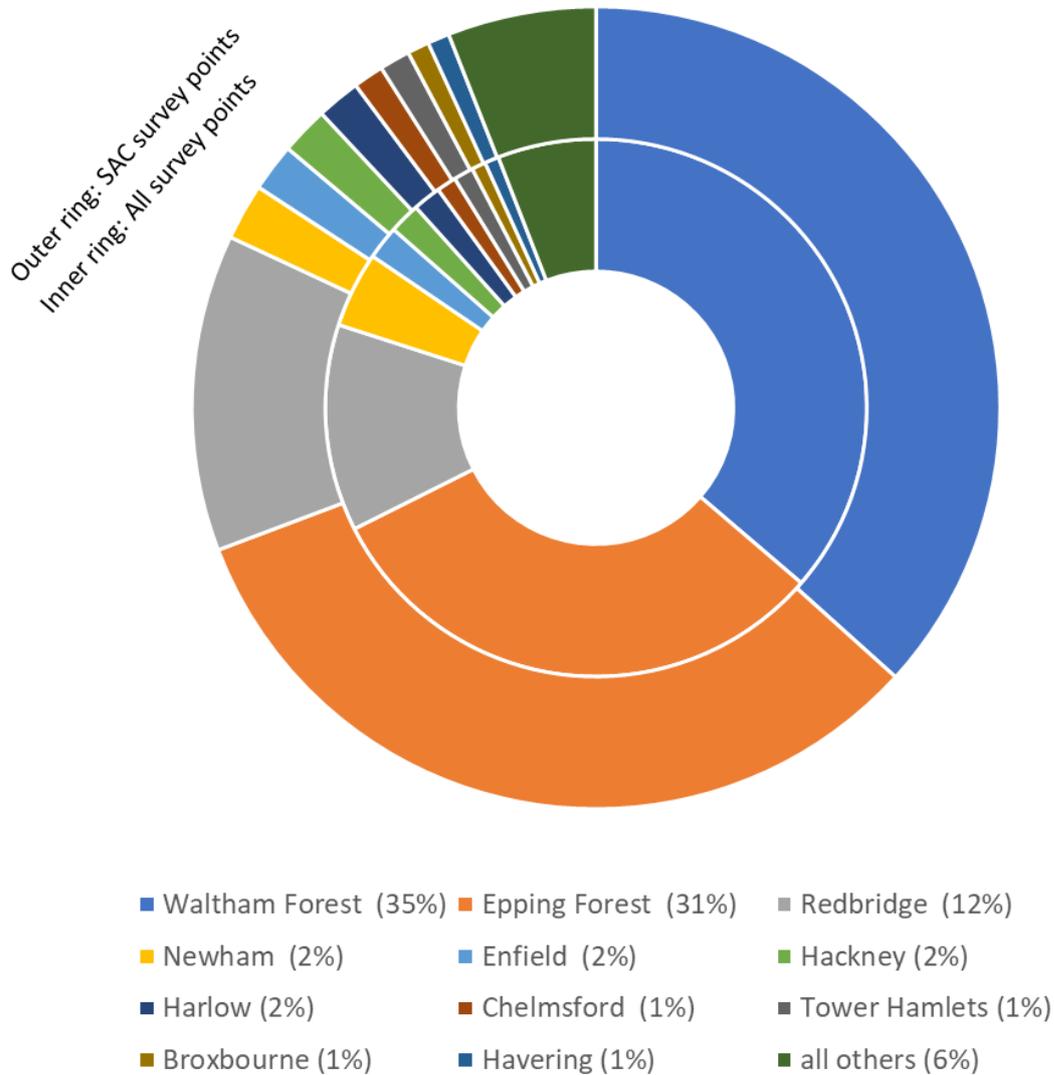
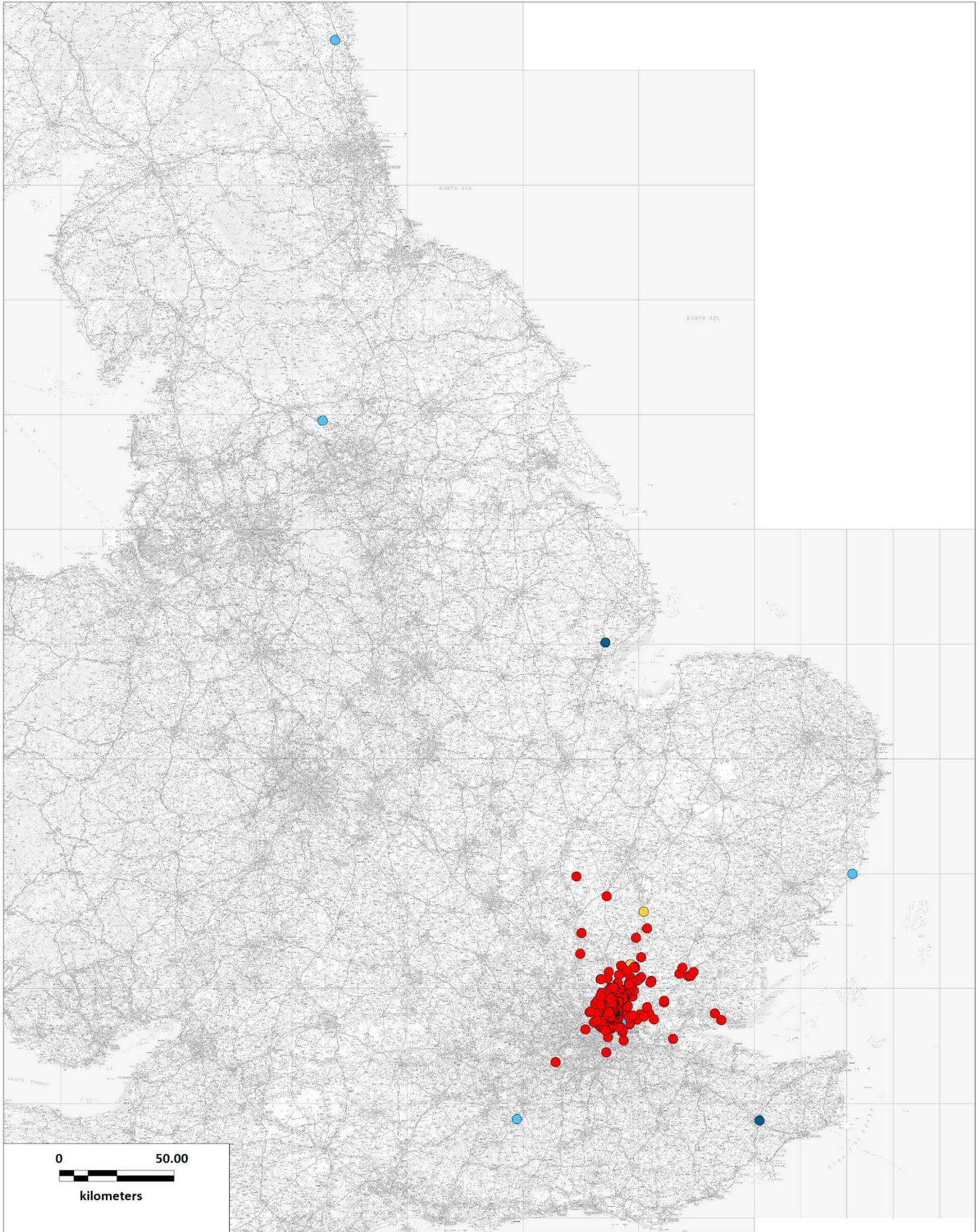


Figure 12: Percentage of interviewees (who gave valid postcodes) living within different local authority areas. Outer ring are the data for the SAC only while the inner ring is all survey points (including point 16, outside the SAC). The % figures given in the legend relate to all interviewees. Named local authorities all had at least 5 interviewees recorded in the survey.

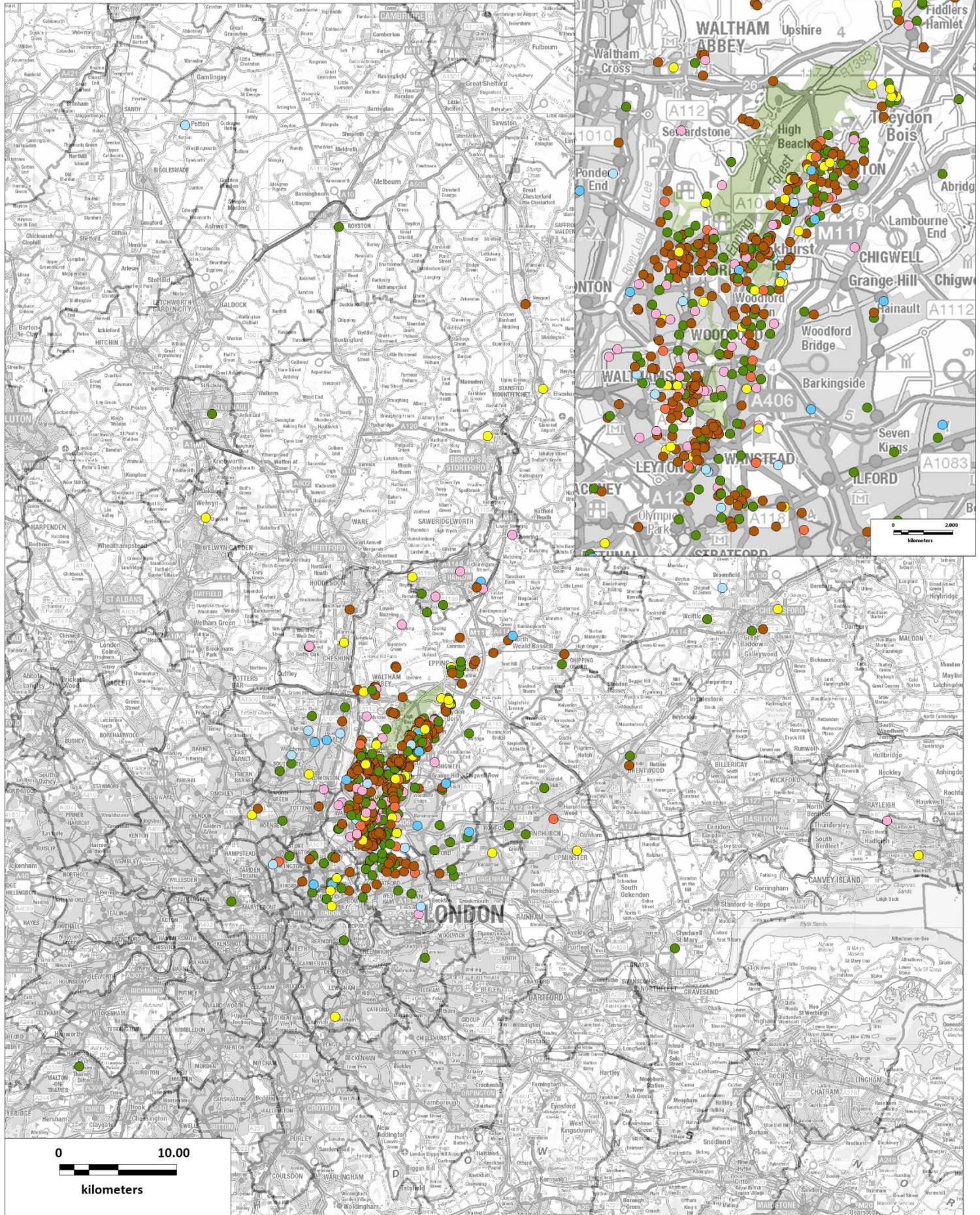


Epping Forest SAC

- Day trip/short visit and travelled directly from home today (585)
- Staying away from home with friends or fam (5)
- Staying away from home, e.g. second home, mobile home or on holiday (2)
- Other (3)

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Map 9: Interviewee postcodes by activity



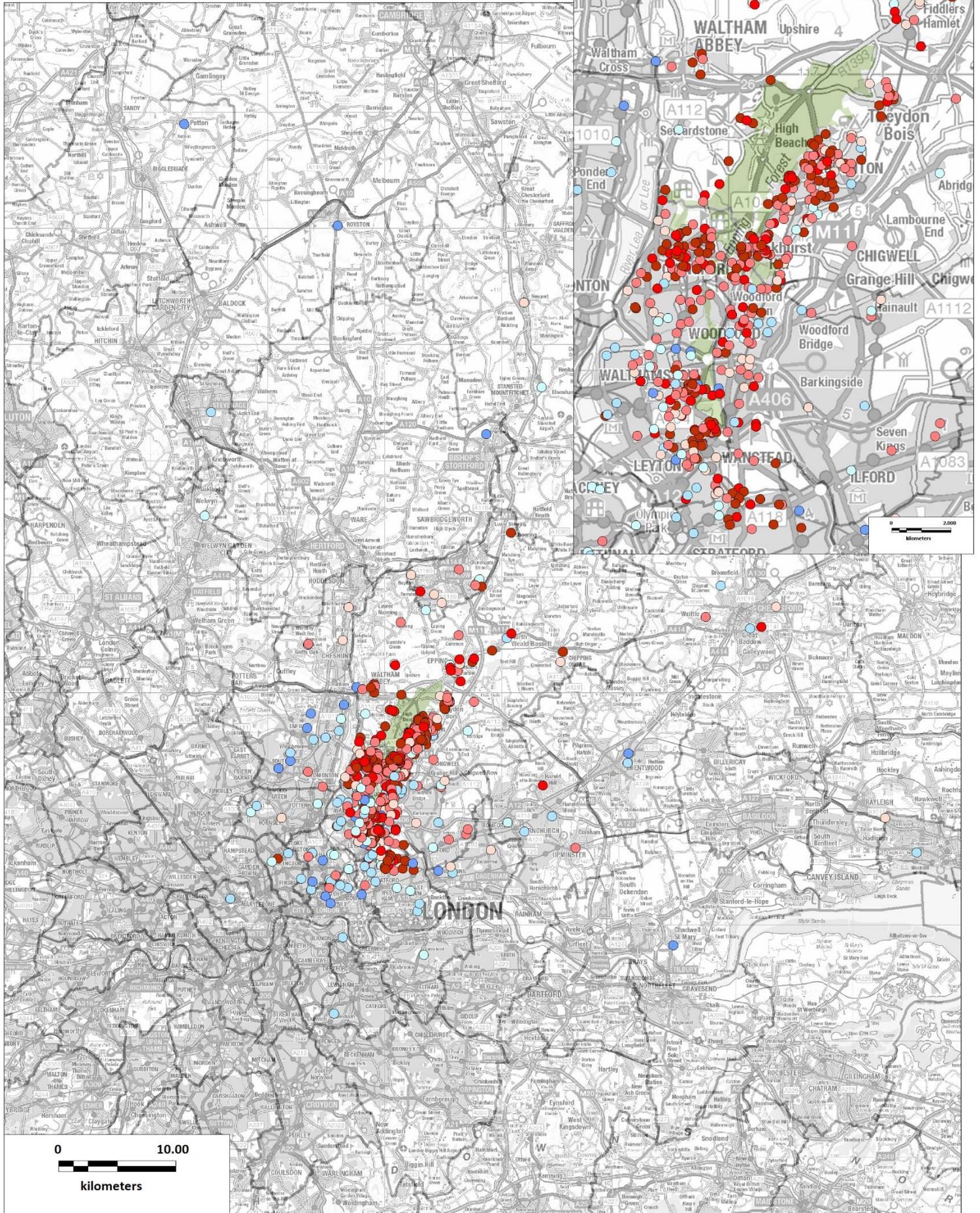
 Epping Forest SAC

Activities (all with at least 10 postcodes)

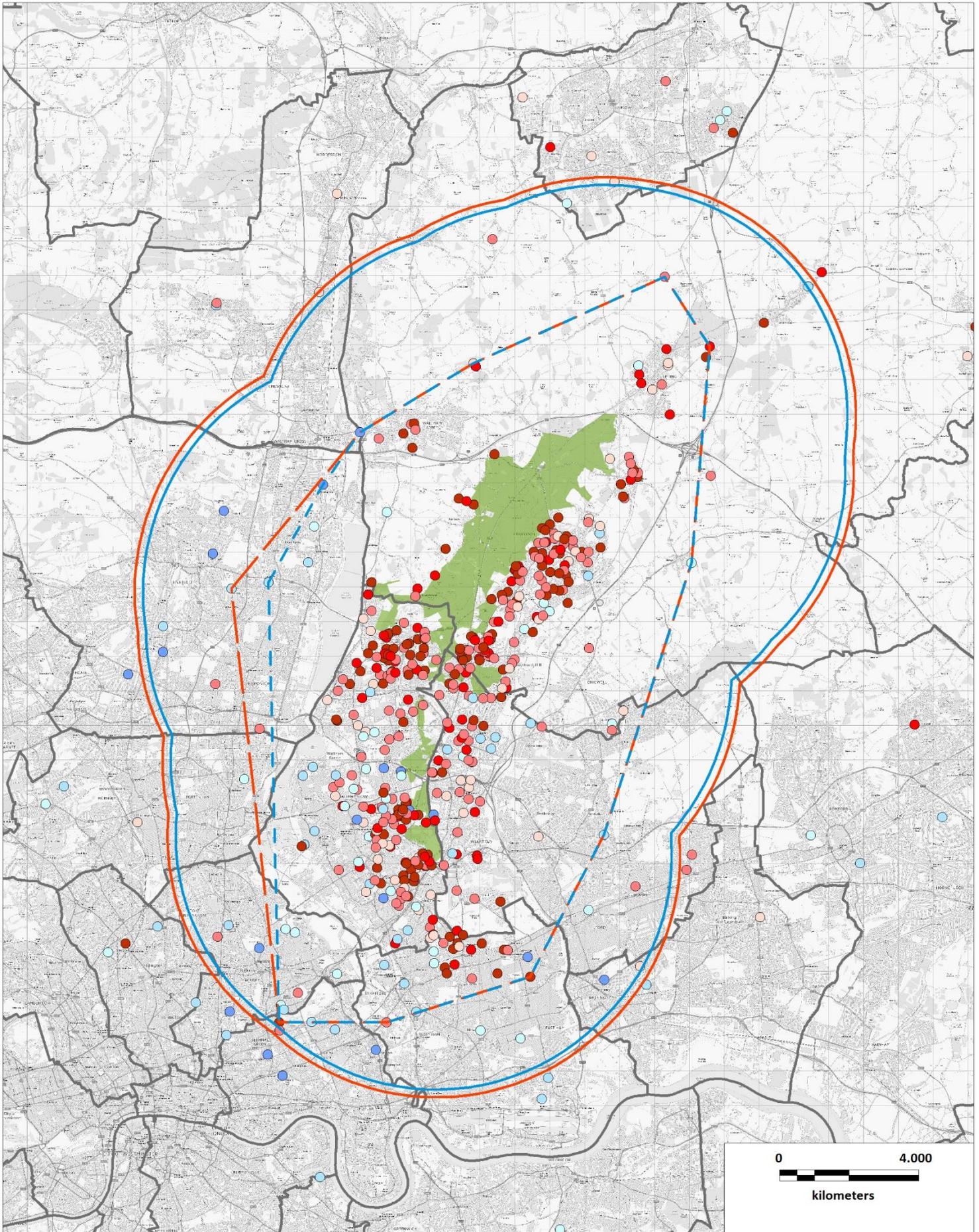
- | | | | |
|--|-------|--|-------|
|  Cycling/Mountain Biking | (47) |  Other | (58) |
|  Dog walking | (254) |  Outing with family | (23) |
|  Enjoying scenery / fresh | (15) |  Walking | (169) |
|  Jogging/ power walking / | (29) | | |

EB716

Map 10: Interviewee postcodes by frequency of visit



Map 11: Interviewee postcodes by frequency of visit, with 75th percentiles illustrated



- Epping Forest SAC
- 6.59 around SAC boundary
- 6.59 convex hull
- 6.81 around SAC boundary
- 6.81 convex hull
- Daily
- Most days (180+ visits)
- 1 to 3 times a week (40-180 visits)
- 2 to 3 times per month (15-40 visits)
- Once a month (6-15 visits)
- Less than once a month (2-5 visits)
- First visit

5. Comparison 2017-2019

5.1 In 2017, 462 interviews were conducted across the 15 survey points (numbers 1-15 in Table 2) and at the same locations in 2019, 604 interviews were conducted. There was no significant correlation between the two years (Pearson correlation coefficient =0.419, $p=0.12$), suggesting that survey locations were not consistent in their relative number of interviews between the two surveys. Looking in more detail it can be seen (Figure 13) that three survey locations in particular were markedly different: Wellington Hill Car-park had many more interviewees in 2017 (this was the location where the car-park had closed) while at St. Peters and Lakeside many more interviews were conducted in 2019 compared to 2017. Overall there were 11 out of the 15 survey points that had more interviews conducted in 2019 (Figure 13).

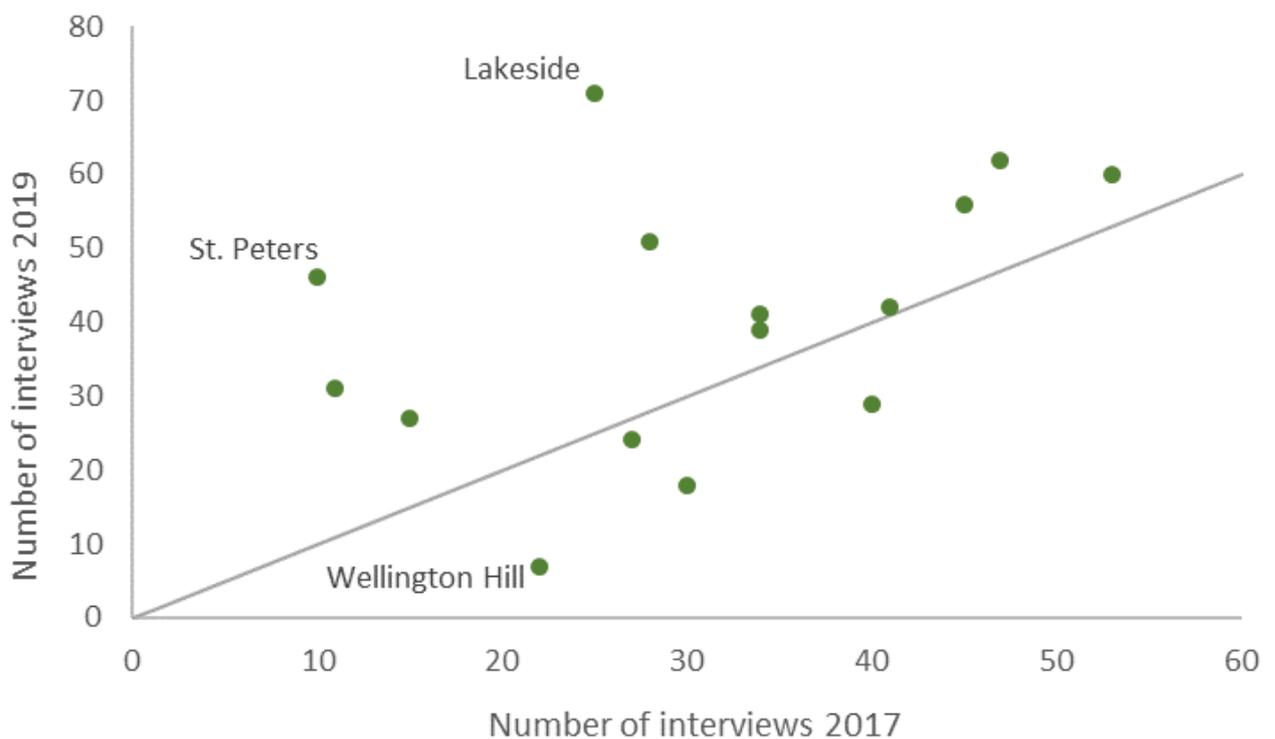


Figure 13: Plot of number of interviews per survey point in 2017 compared to 2018. The diagonal line shows the 1:1 relationship. Any points below the line are therefore ones that had more interviews in 2017. Three outliers are labelled.

5.2 In order to compare the survey results from the 2017 survey and this survey, a selection of key metrics (for the 15 survey points surveyed in each year) are summarised in Table 14. It can be seen that the 2019 survey not only involved more interviews, but also included a lower proportion of dog walkers, with a smaller proportion seen off lead. A greater proportion of interviewees in 2019 indicated they tended to visit Epping Forest more in the summer and the median route length was lower (2.50km compared to 3.27km). A slightly higher proportion of interviewees had arrived on foot in 2019 and conversely slightly fewer by car. Comparing the distances from home postcode to survey point, the median in 2019 was slightly lower (2.93km compared to 3.08km) yet the 75th percentile was slightly higher (7.02km⁷ compared to 6.16km).

Table 14: Selected metrics from the 2017 visitor survey and this survey. In order to draw direct comparison data for 2019 relate to the 15 survey points that were also surveyed in 2017.

	2017	2019	% change
Total interviews	462	602	30
Time of year surveys undertaken	Late Oct/Nov	Sept	
Average group size (entering) from tallies	2.07	2.05	-1
Total people entering from the tally data	2207	2569	16
Total dogs entering from the tally data	552	678	23
Ratio of total people entering per dog entering from the tally data	4.0	3.8	-5
Total dogs with interviewed groups	365	348	-5
% dogs seen off lead	63	47	-25
% interviewees dog walking	49	39	-20
% interviewees visiting daily	24	23	-4
% interviewees stating they visit more in the summer	10	23	130
% interviewees arrived by car/van	77	69	-10
% interviewees arrived on foot	14	20	43
% of interviewees that had visited a visitor centre in past year	47	38	-19
Median route length (km)	3.27	2.50	-24
Median distance home postcode – survey point (km)	3.08	2.93	-5
75 th percentile, distance home postcode – survey point (km)	6.17	7.02	14

5.3 Postcode data from the two surveys are shown side by side in Map 12 (note the area included on the maps means some more distance postcodes are

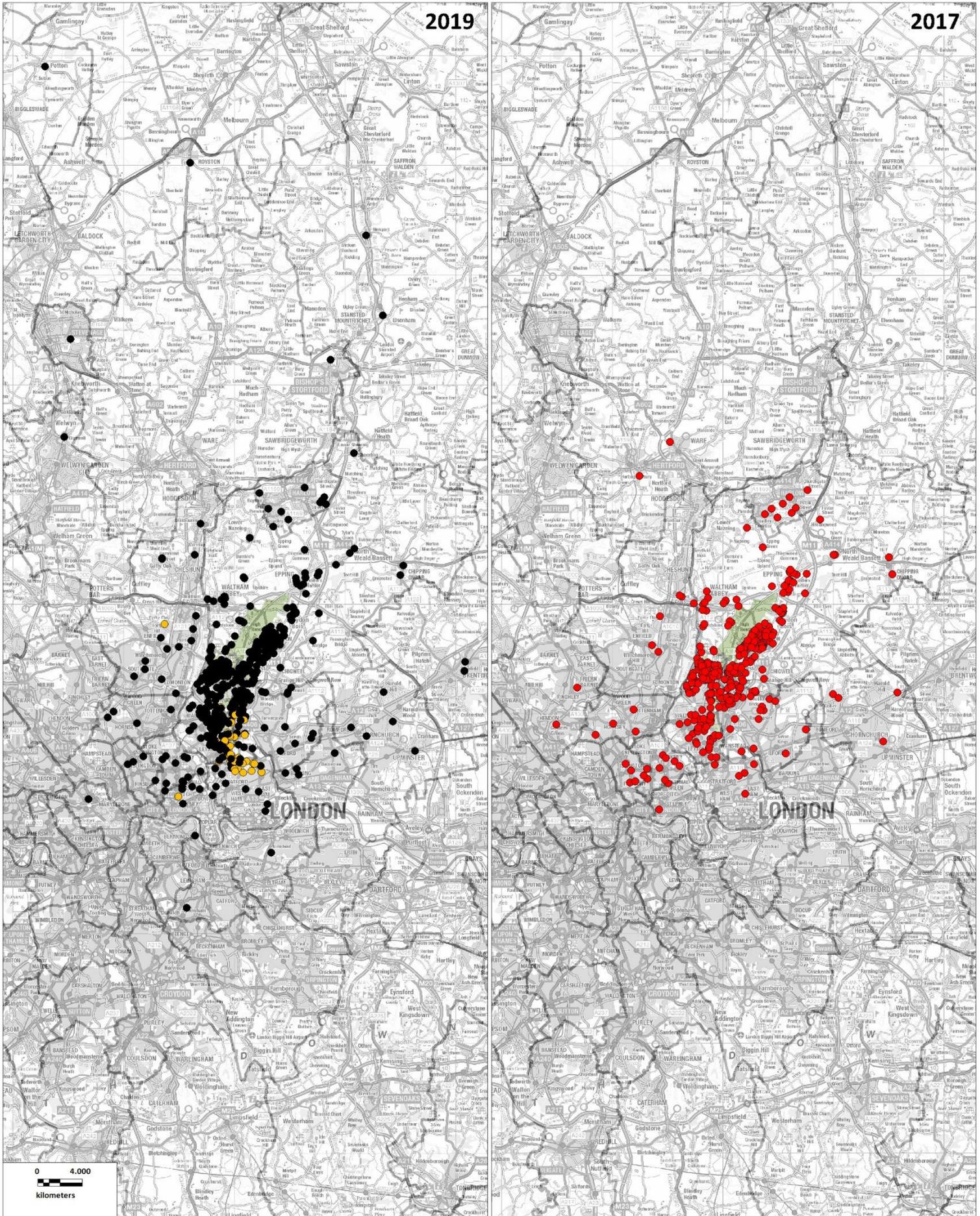
⁷ Note this figure is different to the value given earlier in the report as in this section the data relate to the 15 survey points that were surveyed in both 2017 and 2019, allowing direct comparison.

outside the area shown). The data show a broadly similar distribution, with postcodes concentrated around the east and southern edges of the SAC.

- 5.4 If the data from the two years are merged into a single data set and just taking the data for those interviewees visiting from home that day and interviewed at SAC survey points (i.e. excluding those interviewed at Wanstead Flats in 2019), the overall median is 2.93km with 75% originating from 6.31km.

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Map 12: Comparison of 2017 and 2019 postcode data



2019 postcodes

- Surveyed in 2017
- Only surveyed 2019



Epping Forest SAC

● 2017 postcodes

6. Discussion

Time of year

- 6.1 This visitor survey builds on the previous survey, providing results from a different time of year. The previous survey included late October (i.e. half-term) and the late autumn during November. Supplementing that data with surveys from a different time of year – closer to summer with more daylight and better weather - is likely to mean a wider range of access and visitor use. Early September is perhaps in some ways ideal, as it is a time of year when local people are not likely to be away on holiday, yet many outdoor activities are likely to take place.
- 6.2 This survey also extends the previous work through the inclusion of additional survey locations, including those outside the SAC, at Wanstead Flats. The Flats are managed by the Corporation of London and the area represents a significant area of semi-natural greenspace to the south of the SAC.
- 6.3 In this survey, and drawing comparison with the survey locations surveyed in both years, 30% more interviews were achieved and the tally data reflected the overall number of people entering was 16% higher. These differences are too large to be driven by changes in local housing (which is likely to have increased between the two surveys). They are therefore likely (at least in part) to reflect the time of year and highlight the benefit of additional survey data from a different time of year.
- 6.4 The discrepancy between the 30% more interviews while visitor numbers were 16% higher could be down to a range of reasons. The 2019 questionnaire was different and took slightly less time to complete an interview (8 minutes median compared to 9 minutes in 2017). Furthermore, during better, warmer weather people are perhaps easier to intercept as they may linger longer. Access patterns during the day may also be different, with use spread over a longer period (i.e. making use of the daylight) in September, rather than in more concentrated time windows. Surveyors can only interview one person at a time, so more interviews will be achieved where there is a steady stream of people compared to larger volumes of people all visiting at once.

Implications for mitigation

- 6.5 The visitor survey results provide information to underpin mitigation for housing around the SAC and impacts from increasing recreation pressure. The survey results highlight the clear pressure from local development, with a high proportion of use from close to the SAC (see Figure 11) and the majority of visitors from around 7km.
- 6.6 Mitigation approaches for recreation impacts typically involve access management type measures (e.g. ranger presence) and provision of alternative green space. The results indicate a relatively high proportion (some 38%) had visited one of the Epping Forest visitor centres in the past year and around 30% had spoken to a ranger or other staff member over the past year. While there is clearly scope to increase these levels, they suggest a relatively high level of engagement with existing visitors.
- 6.7 Around 31% of interviewees indicated that all their recreational use (for the given activity undertaken when interviewed) took place at Epping Forest. Interviewees clearly visit other locations and the survey results provide some clear indications of which are most popular (see Figure 7). Some 29% of interviewees were able to name local greenspace sites they thought could be improved and would work to absorb some of the recreational pressure currently focussed at Epping Forest. 73 different sites were named and while an audit of these is beyond the scope of this report, the list clearly includes a range of sites, some with limited or poor access and some that are country parks or high profile greenspaces. This list provides the basis for work to improve the network of greenspaces around Epping Forest and Map 7 provides a starting point to identify sites. Many of these locations are in local authority ownership or owned by the Corporation of London. Suggested improvements are listed in full in Appendix 2.

Defining a zone of influence

- 6.8 The 75th percentile value for the distance from interviewee postcodes to survey location is often used to define a zone of influence – the broad area within which visitors originate. For example, for both the Dorset Heaths and the Thames Basin Heaths, planning policy sets a presumption against any development within the first 400m and then for development within 400m - 5km of the European site boundary, mitigation is required to resolve impacts from increased recreation to the European site. The 5km broadly reflects

the 75th percentile (rounded up) from visitor surveys (Clarke, Liley, Underhill-Day, & Rose, 2006; Liley, Jackson, & Underhill-Day, 2006).

- 6.9 In this survey the broadly equivalent figure is 6.81km, reflecting the 75th percentile for all interviewees at the SAC survey points. This compares to a value of 6.17km for the 2017 survey. With the 2019 survey the figure drops slightly (to 6.59km) if we just take those visiting from home and exclude holiday makers etc. These values will inevitably show some variation between surveys and in 2017 slightly different survey points were used and there have been some changes in the interim, such as at Wellington Hill. If the data from the same survey points are extracted from the 2019 data – to allow a like for like comparison – then the 2019 figure is 7.02km.
- 6.10 We have shown 6.81km and 6.59km on Map 11 as broad buffers around the SAC boundary and also plotted both as a convex hull. The convex hull precisely encloses the selected postcodes and as such the shape can be influenced by individual postcodes and the choice of survey location. The convex hull is therefore a useful way of visualising the data and checking to see the extent to which the distribution of postcodes is even, all round the SAC, but the simple broad buffer (the solid line in Map 11) is the approach that is likely to be best used as a zone of influence. The 6.81km and 6.59km broad buffers have been drawn from the SAC boundary rather than the survey locations. This makes sense as the survey points are just a sample of all the possible entry points onto the SAC and while many were well inside the SAC, there are also entry points that will be around the outer edge.
- 6.11 Map 11 really serves to highlight that there is little difference between the 6.81km and 6.59km. The convex hulls certainly enclose the postcodes of frequent visitors and the broad outer buffers work to define an area on a more precautionary basis that will ensure use from un-surveyed access points is included.

7. References

Clarke, R. T., Liley, D., Underhill-Day, J. C., & Rose, R. J. (2006). *Visitor access patterns on the Dorset Heaths*. English Nature Research Report 683.

Liley, D., Jackson, D., & Underhill-Day, J. (2006). *Visitor Access Patterns on the Thames Basin Heaths* (No. 682). Retrieved from English Nature Research Reports, N682 website:
file:///S:/reports%20%26%20pdfs/Papers%20linked%20to%20Endnote/ENRR682%20TBHVisitorReport.pdf
file:///S:/reports%20%26%20pdfs/Papers%20linked%20to%20Endnote/Footprint%20Reports/Thames%20Basin%20Heaths%20Visitor%20Access%20Patterns,%20April%202006,%20FINAL.pdf

Liley, D., Panter, C., Weitowitz, D., & Saunders, G. (2018). *Epping Forest Visitor Survey 2017* (Unpub. No. 438). Footprint Ecology / City of London.

Ratcliffe, D. (1977). *A nature conservation review*. Cambridge, UK.: Cambridge University Press.

Appendix 1: Questionnaire



Good morning/afternoon. I am conducting a visitor survey on behalf of the local councils, who are interested in gathering visitor's views about Epping Forest and how they use it. Can you spare me a few minutes please?

Q1 ...

- Are you on a day trip/short visit and have travelled directly from your home today... *if no*
- Are you on a short trip/short visit & staying away from home with friends or family ... *if no*
- Are you staying away from home, e.g. second home, mobile home or on holiday
- If none of the above, **How would you describe your visit today?**

Further details

Q2 **What is the main activity you are undertaking today?** *Tick closest answer. Do not prompt. Single response only.*

- Dog walking
- Walking
- Jogging/ power walking / running
- Outing with family
- Cycling/Mountain Biking
- Bird/Wildlife watching
- Enjoying scenery / fresh air
- Photography
- Meeting up with friends
- Picnic
- Horse riding
- Boat hire/boating
- Visiting cafe/visitor centre
- Fitness/formal sports
- Other, please detail:

Further details

Q3 Over the past year, roughly how often have you visited Epping Forest? *Tick closest answer, single response only. Only prompt if interviewee struggles.*

- Daily
- Most days (180+ visits)
- 1 to 3 times a week (40-180 visits)
- 2 to 3 times per month (15-40 visits)
- Once a month (6-15 visits)
- Less than once a month (2-5 visits)
- Don't know
- First visit
- Other, please detail

Further details:

Q4 How long have you spent / will you spend at Epping Forest today? *Single response only.*

- Less than 30 minutes
- Between 30 minutes and 1 hour
- 1-2 hours
- 2-3 hours
- 3-4 hours
- 4 hours +

Further details

Q5 **Do you tend to visit this area at a certain time of day?** *Tick closest answers. Multiple answers ok.*

- Early morning (before 7 am)
- Late morning (between 7 am and 10 am)
- Midday (between 10 am and 2 pm)
- Early afternoon (between 2 pm and 4 pm)
- Late afternoon (between 4 and 6 pm)
- Evening (after 6 pm)
- Varies / Don't know
- First visit

Q6 **Do you tend to visit this area more at a particular time of year for [insert given activity]?** *Multiple answers ok.*

- Spring (Mar-May)
- Summer (Jun-Aug)
- Autumn (Sept-Nov)
- Winter (Dec-Feb)
- Equally all year
- Don't know
- First visit

Q7 **How long have you been visiting Epping Forest?** *Single response only. Do not prompt.*

- Don't know
- First visit
- less than or approximately 6 months
- less than or approximately 1 year
- less than or approximately 3 years
- less than or approximately 5 years
- less than or approximately 10 years
- more than 10 years

Further details:

Q8 **How did you get here today?** *if necessary prompt with: What forms of transport did you use? Multiple response possible - e.g. tube and foot.*

- Car / van
- On foot
- Train (mainline)
- Tube
- Bus
- Bicycle
- Other, please detail

Q9 Q8=tube (*If tube for Q8*): **Which tube station have you just come from?** *We want to know the tube station they have just come from rather than where they started their journey.*

- Buckhurst Hill
- Loughton
- Roding Valley
- Snaresbrook
- South Woodford
- Theydon Bois
- Walthamstow Central
- Other, please detail

Other tube station:

Now I'd like to ask you about your route today. Looking at the area shown on this map, can you show me where you started your visit today, the finish point and your route please. Probe to ensure route is accurately documented. Use **P** to indicate where the visitor parked, **E** to indicate the start point and **X** to indicate the exit. Mark the route with a line; a solid line for the actual route and a dotted line for the expected or remaining route.

Q10 **Is / was your route today the normal length when you visit here for [insert given activity]?** Tick closest answer, do not prompt. Single response only.

- Yes, normal
- Much longer than normal
- Much shorter than normal
- Not sure / no typical visit
- First visit

Q11 **What, if anything, influenced your choice of route here today?** Tick closest answers, do not prompt. Multiple responses ok.

- Weather
- Daylight
- Time
- Other users (avoiding crowds etc)
- Group members (eg kids, less able)
- Muddy tracks / paths
- Followed a marked trail
- Previous knowledge of area / experience
- Activity undertaken (eg presence of dog)
- Interpretation / leaflets / promotion
- Viewpoint / Feature
- Other, please detail

Further details:

Q12 Why did you choose to visit this specific location today, rather than another local site? Tick all responses given by visitor in the 'other' column. Do not prompt, tick closest answers. Then ask **Which single reason would you say had the most influence over your choice of site to visit today?** Tick only one main reason. Use text box for answers that cannot be categorised and for further information.

	Other	Main
Don't know / others in party chose	<input type="radio"/>	<input type="radio"/>
Close to home	<input type="radio"/>	<input type="radio"/>
No need to use car	<input type="radio"/>	<input type="radio"/>
Quick & easy travel route	<input type="radio"/>	<input type="radio"/>
Good / easy parking	<input type="radio"/>	<input type="radio"/>
Particular facilities	<input type="radio"/>	<input type="radio"/>
Refreshments / cafe / pub	<input type="radio"/>	<input type="radio"/>
Choice of routes	<input type="radio"/>	<input type="radio"/>
Feels safe here	<input type="radio"/>	<input type="radio"/>
Quiet, with no traffic noise	<input type="radio"/>	<input type="radio"/>
Not many people	<input type="radio"/>	<input type="radio"/>
Scenery / variety of views	<input type="radio"/>	<input type="radio"/>
Rural feel / wild landscape	<input type="radio"/>	<input type="radio"/>
Particular wildlife interest (including trees)	<input type="radio"/>	<input type="radio"/>
Habit/familiarity	<input type="radio"/>	<input type="radio"/>
Good for dog / dog enjoys it	<input type="radio"/>	<input type="radio"/>
Ability to let dog off lead	<input type="radio"/>	<input type="radio"/>
Closest place to take dog	<input type="radio"/>	<input type="radio"/>
Closest place to let dog safely off lead	<input type="radio"/>	<input type="radio"/>
Appropriate place for activity	<input type="radio"/>	<input type="radio"/>
Suitability of area in given weather conditions	<input type="radio"/>	<input type="radio"/>
Presence of water	<input type="radio"/>	<input type="radio"/>
Other, please detail	<input type="radio"/>	<input type="radio"/>

Further details:

I would now like to ask about other local sites that you visit for [given activity].

Q13 What proportion of your weekly visits for [given activity] take place at Epping Forest compared to other sites. Can you give a rough percentage? *Do not prompt*

- All take place here
- 75% or more
- 50-74%
- 25-49%
- less than 25%
- Not sure/don't know/first visit

Please could you tell us the name of up to 3 other locations (beside Epping Forest) that you visit most often for [given activity]? Please list them in order, starting with the one you visit most.

Q14 Name of Site 1? *Do not prompt, as relevant tick one of named sites below and record the named site if its not one listed.*

- Lee Valley Park
- Walthamstow Wetlands
- Wanstead (including Wanstead Flats or Wanstead Park)
- Roding Valley
- Queen Elizabeth Park
- Chingford (including Chingford Cemetary/Golf Course)
- Site Named

Record site name:

Q15 **Name of Site 2?** Do not prompt, as relevant tick one of named sites below and record the named site if its not one listed.

- Lee Valley Park
- Walthamstow Wetlands
- Wanstead (including Wanstead Flats or Wanstead Park)
- Roding Valley
- Queen Elizabeth Park
- Chingford (including Chingford Cemetary/Golf Course)
- Site Named

Record site name:

Q16 **Name of Site 3?** Do not prompt, as relevant tick one of named sites below and record the named site if its not one listed.

- Lee Valley Park
- Walthamstow Wetlands
- Wanstead (including Wanstead Flats or Wanstead Park)
- Roding Valley
- Queen Elizabeth Park
- Chingford (including Chingford Cemetary/Golf Course)
- Site Named

Record site name:

Q17 There is increasing pressure for recreation in and around Epping Forest and visitor numbers are increasing. Can you think of a different local greenspace site that could be improved to provide an alternative place that would be similarly attractive for access by local people?. *Do not prompt, record site name if given.*

- Not sure/none/no
- Site Named

Record site name:

And what improvements would you like to see?:

Q18 If there was an entirely new area created near to Epping Forest that provided a new, large area of countryside for people to visit, would you be likely to go there [for given activity]?

- Yes
- Not sure/don't know/perhaps
- No

Q19 **If a new site were created to provide an alternative location for your activities, what features would you want to see there?** *Multiple responses ok. Prompt if necessary.*

- No features / nothing
- Don't know
- More dog bins
- Safe for dogs
- Ability to let dog off lead
- No requirement to pick up after dog
- Requirement to pick up after dog
- Better path surfacing / path network
- More litter bins
- Refreshments (cafe, pub etc)
- Visitor centre
- Toilets
- Measures in place to control other users
- Better or easier parking facilities
- Free parking
- Closer to home
- Cycle trails
- Dedicated routes for horse riding
- More attractive surroundings
- Other, please detail

Further details:

I'd now like to ask you about the visitor facilities at Epping Forest.

Q20 **Have you visited one of the visitor centres at Epping Forest, such as at High Beech or the View, in the last year?** *Tick one, do not prompt.*

- Yes
- No
- Don't know

Q21 **Have you spoken to one of the rangers or other Corporation of London staff in the last year?** *Tick one, do not prompt.*

- Yes
- No
- Don't know

Q22 **Do you have any further comments or general feedback about your visit and access to this area?**

Q23 **Finally, to identify which areas people travel from to visit Epping Forest, what is your full home postcode?** *This is an important piece of information, please make every effort to record correctly.*

Q24 *If visitor is unable or refuses to give postcode:* **What is the name of the town or village where you live?**

Q25 *If visitor is on holiday ask:* **Which town / village are you staying in?**

That is the end. Thank you very much indeed for your time.

Q26 TO BE COMPLETED AFTER INTERVIEW FINISHED.

Surveyor initials	<input type="text"/>
Survey location code	<input type="text"/>
Map Reference Number	<input type="text"/>
Gender of respondent	<input type="text"/>
Total number in interviewed group	<input type="text"/>
Total males	<input type="text"/>
Total females	<input type="text"/>
Total minors (under 18)	<input type="text"/>
Total number of dogs	<input type="text"/>
Number of dogs seen off lead	<input type="text"/>

Q27 Did the interviewee struggle with answering questions because English was not their first language? Tick yes if you feel this may have influenced the responses.

Yes, interviewee struggled because English was not their first language

Q28 Surveyor comments. *Note anything that may be relevant to the survey, including any changes to the survey entry that are necessary, eg typos/mistakes/changes to answers/additional information.*

Appendix 2: Improvements to local greenspace sites identified in Q17

All suggested improvements recorded by the surveyors are listed here, as transcribed by the surveyors onto the tablet during the interview. Improvements are listed by site.

Site	Improvements suggested
Abbot's Park	Too much rubbish and doesn't open until 7
Across Epping New Road Towards Loughton	Bigger car park and bins
All Sites	More information on how it all connects
Blunts Farm	They now dump spoil there and they put application for houses, could put a reserve there
Broxbourne	Car parking and trails going into it.
Broxbourne	The towpath can't cope with my mobility scooter. Paths need to be smoother.
Buckhurst Hill	Benches in scenic places, refreshments
Buckhurst Hill	Tracks could be improved and lengthened
Chingford	More tea huts
Chingford	Play area, cafe, picnic area.
Chingford Area	Overgrown could be managed better
Chingford Area	Some seating and flower beds
Chingford Golf Course	More parking
Chingford Plain	A lake
Chingford Plain	Benches and picnic tables, barbecue site
Chingford Plain	Less dog mess
Chingford Plain	No real improvements needed
Chingford Plain	Not safe for dogs and lots of rubbish
Chingford Plain	Something for children to play on, more animals
Chingford Plain	Things for children
Clay Ride	Too wet and slippery in winter, aggregate surface.
Claybury Park	Better paths and bins
Claybury Park	Facilities like toilets
Connaught Water	Put in a visitor centre with a coffee shop in it. More bins.
Connaught Water	Toilets and parking.
Connaught Water	You don't need to improve it or it will be spoilt.
Coopersale	Dog poo bins there
Copthall Area	Create better paths and provide some signs
Copthall Area	Parking and better paths also Upshire
Copthall Area	Plant more trees
Dale Gardens	Car park area would help access
Debden Green	Get rid of campsite
Epping	Creating car parks

Site	Improvements suggested
Epping Forest	Rather than another site open up other parts of the forest to spread out visitors. We tend to walk around the same part because of the facilities.
Epping Green	Clear walking routes of scrub
Fairmead	Road improvements have made it harder to get to fairness.
Galley Hill	Better tracks
Goodmayes	Needs tidying up and policing
Great Wood	Good cycling routes.
Gunpowder Park	At the moment it's not a great place to walk.
Gunpowder Park	Control of dogs and dog poo
Gunpowder Park	Free parking. Cafe. Better access.
Gunpowder Park	Similar to what's been done at Stratford, things for kids, cycle trails
Gunpowder Park	Too small to get a decent walk
Hackney Marshes	Cafe.
Hainault	Marked paths
Hainault	More events
Hatch Forest/Ching Valley	More parking,
Hatfield Forest	Could have public transport there
Havering Country Park	More bridle routes
High Beech	Car parking
High Beech	No
Highams Park	Access
Highams Park	Enlarge green area, make more accessible
Highams Park	Play area, benches, bins and parking, currently quite bland
Highams Park	Removal of litter, more restrictions on dog walkers as professional dog walkers let dogs go free. More parking
Hollow Ponds	Add parking and seating, but natural furniture
Hollow Ponds	Anti-social behaviour
Hollow Ponds	It's too wild have some work done on it
Horsenden Farm	Rubbish cleared up
Ingrebourne Hill	Better track surface needed
Jessal Green	Dog agility
Jessel Green	Stop developments and keep green spaces
Jessel Green	Were plans to build but it fell through so improve it and make it a nice park with wheelchair access etc
Jubilee Park	Anti-social behaviour
Knighton Wood	Charming as it is
Knighton Wood	Needs more parking
Knighton Wood	Parking an issue
Knighton Wood	Space for playground, create grassy area where it is currently rough grass and scrub, add benches and toilets
Larkswood	Better paths, smarten it up
Larkswood	Better seating and maintenance and paths
Lee Canal	Could be maintained

Site	Improvements suggested
Lee Canal	More advertising needed
Lee Valley	Charges put them off
Lee Valley	Create walks and encourage the wildlife and ban bikes
Lee Valley	Improve cycling routes and refreshments. More things for children.
Lee Valley	It's already used a lot. I'm not sure what would improve it.
Lee Valley	Lee valley area is disjointed
Lee Valley	More affordable parking. Keep places more natural. Tea hut.
Lee Valley	More rubbish bins
Lee Valley	Promote it more because we get lots of new visitors directed here. They don't always respect the forest and their dogs are out of control.
Lee Valley	Remove parking charges
Lee Valley	The parking system either expensive and the parking eye too complicated and doesn't always work
Lee Valley	They charge too much for parking, puts us off going there.
Lee Valley	Walking routes
Linder's Field	Fragmented site - unified route needed, too many dogs there
Lloyd Park	Improve perimeter path surface
Loughton	Increase size of car park.
Manor Park	Make it a dog walking area
Mansfield Park	Add parking, link to reservoirs nearby, expand path network
Mansfield Park	Bins, tracks
North Chingford	Improve the terrain
Northwood Common	Just an open field that's muddy so better pathways and the playground looks awful
Olympic Park	Area to let dog off lead
Ponders End Lock	Lots of rubbish at Edmonton end needs clearing
Ray Lodge	Removed fence around children's play area so dogs get in and mess. Repair bridge over river
Redbridge	Needs cycle lanes, needs better infrastructure
Ridgway Park, North Chingford,	Better walking paths
Roding	Too much dog poo, too many roads and cycle routes
Roding Park	A bit more landscaping, it is a bit creepy, add toilets, make prettier, add a better park
Roding Valley	Better paths and entrances and exits. Better signage and tidier.
Roding Valley	Cycle routes.
Roding Valley	Improved access
Roding Valley	More gravel paths to make it accessible
Roding Valley	Needs more parking.
Roding Valley	No parking charges
Roding Valley	Not as safe
Roding Valley	Paths
Royal Oak	Needs footpaths

Site	Improvements suggested
Sewardstone Paddocks	Fencing for security
Suntrap Farm Site	I think it's being refurbished
'The Paddocks' On Sewardston Rd	Only cut once a year but then gets overgrown, could be maintained so people will walk there more
Theydon Bois Area	Create picnic areas
Theydon Bois Area	Decent parking and children's activities
Theydon Bois Area	Have friends that walk over there but others might go if better advertising and way markers
Theydon Bois Area	Tree planting
Tottenham Marshes.	Would need areas of grass.
Trent Park	Maps, walking routes, visitor centre
Upshire Way	Put some parking bays up there.
Waltham Abbey	Clear up glass on pavements
Waltham Forest	Stop the ban on dogs
Walthamstow Wetlands	Doesn't feel safe, very tall shrubbery
Walthamstow Wetlands	It's already been improved.
Wanstead Flats	Better lighting plus wider footpaths
Wanstead Flats	Better quality trails for bikes, better surfaces
Wanstead Flats	Improve car park. Add toilet.
Wanstead Flats	It's been improved recently
Wanstead Flats	Lost bridge after a fire and sad it's gone
Wanstead Flats	More landscaping. Better car parking.
Wanstead Flats	More wild and less management
Wanstead Flats	Trees, pond needs attention
Warren Hill	Maps, routes with signposts
West Ham Park	Needs to be more safe
West Ham Park	Not natural enough and too many people
Whipps Cross	More parking
Woodford Area	Could be improved with play equipment
Yardley Hill	Surfaced path

Appendix 3: Local greenspace sites identified in Q17 and shown on Map 7

This appendix provides the data behind Map 7, listing the green spaces that were mapped and the number of interviewees that named each. Sites are ranked according to the number of responses.

Site	Number of interviewees
Lee Valley	12
Chingford Plain	9
Wanstead Flats	8
Roding Valley	7
Knighton Wood	6
Gunpowder Park	5
Hainault	5
Highams Park	5
Connaught Water	4
Linder's Field	4
Hollow Ponds	3
Lee Canal	3
Walthamstow Wetlands	3
Woodford Area	3
Abbot's Park	2
Broxbourne	2
Chingford	2
Chingford Area	2
Claybury Park	2
Copthall Area	2
Copthall Area	2
Havering Country Park	2
High Beech	2
Jessel Green	2
Larkswood	2
Mansfield Park	2
North Chingford	2
Theydon Bois Area	2
Theydon Bois Area	2
West Ham Park	2
Barkingside - Park	1
Blunts Farm	1
Buckhurst Hill	1

Site	Number of interviewees
Buckhurst Hill	1
Chigwell area	1
Chingford Area	1
Chingford Area	1
Chingford Golf Course	1
Coopersale	1
Copthall Area	1
Copthall Area	1
Dale Gardens	1
Debden Area	1
Debden Green	1
Epping	1
Epping Green	1
Fairlop Plains	1
Fairmead	1
Goodmayes	1
Great Wood	1
Hackney Marshes	1
Hadley Wood	1
Hainault Park	1
Hatch Forest/Ching Valley	1
Hatfield Forest	1
Ingrebourne Hill	1
Jessal Green	1
Jubilee Park	1
Lee Valley	1
Lee Valley Wetlands	1
Lee Valley Wetlands	1
Lloyd Park	1
Loughton	1
Manor Park	1
Near Warren Wood	1
Olympic Park	1
Ponders End Lock	1
Ray Lodge	1
Redbridge	1
Ridgeway Park	1
Ridgway Park, North Chingford,	1
Roding	1
Roding Park	1
Roding Valley	1

Site	Number of interviewees
Roding Valley	1
Roding Valley	1
Royal Oak	1
Sewardstone Paddocks	1
Suntrap Farm Site	1
'The Paddocks' On Sewardston Rd	1
Theydon Bois Area	1
Theydon Bois Area	1
Tottenham Marshes.	1
Trent Park	1
Under Flyovers By South Woodford, Onslow Gardens Be Rodean Valley	1
Upshire Way	1
Waltham Abbey	1
Walthamstow	1
Warlies Park	1
Warren Hill	1
Whipps Cross	1
Woodford Green	1
Yardley Hill	1