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Little Marlow Lakes Country Park Visitor Survey: October 2023

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Summary

This report has been commissioned by Buckinghamshire Council to conduct a detailed examination of the suitability of the proportion of the site within Little Marlow Lakes Country Park (LMLCP) as an alternative greenspace for recreation (Suitable Alternative Natural Greenspace, 'SANG'). We present the results of visitor surveys at the site and discuss the levels of access and appropriateness of the site as a SANG.

The site is a popular location particularly for walkers and dog walkers, but also for a range of other activities, such as running, cycling, socialising and angling. The site has a regular community of locals who use the site during the week and heavily at weekends. The riverside location increases use in the summer, particularly on weekdays with larger family groups and more dogs. The main draw for the site is the Thames, with the paths along the Thames accounting for around 40% of the access to the site. Just over half the visitors arrived by car, but around 2 in 5 arrived on foot, often as part of a longer route from Little Marlow or along the Thames. Route lengths were much longer than expected, in part due to the large size of the lake when conducting a circular route, and long routes along the Thames.

We estimate that the site boundary, as originally examined has around 61 people visiting per hour, based on data collected by direct counts, from automated counters and interviewee route extrapolation. Accounting for the area of the site, it would suggest the site is likely to be slightly too busy for a SANG, just over the 1 person per hectare per hour threshold. However, as already mentioned, most visitors are located along the Thames path and therefore away from the core of the site. Recalculation of levels of access, after excluding the land south of the railway line which includes the Thames path, would suggest the site is at around half of its capacity. Therefore it is possible to identify a circular walk as part of the measures needed to create a SANG around Spade Oak Lake.

The removal of this land along the Thames, sticking to the current site boundary, would force a circular walk around the lake and the route to run alongside a wastewater treatment works; viewed as an 'unpleasant intrusion' in the SANG guidelines. Interviewees were asked if this affected their use of the site, around a third reported it did and therefore it would suggest a proportion of the potential new SANG visitors would still be put off from visiting currently. However, the inclusion of additional land could mitigate the need for the circular walk to pass the wastewater treatment works.

The future of the site as a potential SANG will require further engagement with key stakeholders in taking forward the site. These include Natural England and Thames Water, as discussed, by also Network Rail and local nature and fishing groups. The options for required improvements will need discussion with parties to help resolve.

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1. Introduction

- 1.1 The work was been commissioned by Buckinghamshire Council in April 2023 to conduct a detailed examination of the suitability of part of the Little Marlow Lakes Country Park (LMLCP) as a Suitable Alternative Natural Greenspace (“SANG”). A key component of the work is to understand whether there is additional visitor capacity at the site, i.e. such that it can be improved to draw more visitors and deflect access away from the SAC habitats. Specific points examined in this survey will address the suitability of the site as a SANG, including the effect of any unpleasant intrusions on visitors.
- 1.2 In event there is not sufficient recreational capacity, the report will set out the options the council can take to move forward to a find suitable SANG provision.

Background and need for this report

- 1.3 Little Marlow Lakes Country Park refers to approximately 300ha of land with access to the public. The site is a multi-purpose area, with a wide range of infrastructure and facilities, including sports grounds, water sports centres, hotel, water treatment works and nature reserve. The Master Plan for the whole site (March 2002) identifies the western end of the site as for “more active uses” while the eastern end, i.e. around Spade Oak Lake, for “quieter uses”. This project specifically refers to the quieter end of the wider Country Park, the land also referred to as Spade Oak Lake nature reserve and some adjacent land alongside the Thames (including the Thames path National Trail) – see Map 1.
- 1.4 A Development Brief in the Wycombe Local Plan (August 2019), and subsequent Appropriate Assessment, recognised a SANG would be required to mitigate recreational impacts on Burnham Beeches SAC from some specific nearby developments. It was agreed with Natural England that mitigation measures at Little Marlow Lakes Country Park, using Council land and the rights of way network, may provide

suitable SANG provision to support these developments in the Local Plan.

- 1.5 A large volume of evidence on visitor use at Burnham Beeches has been compiled (see Liley et al., 2022), and on site surveys from 2014 (359 interviewees) highlight a key group is dog walkers (56% of groups interviewed) and walkers (28% of groups interviewed). Catering for those visitors who would otherwise use Burnham Beeches is a key aim for the SANG.
- 1.6 A series of measures have been identified and costed to improve the site to help meet the SANG guidelines. However, the site will also require an understanding of the current levels of access, to determine whether the site can accommodate further recreational use, and if so, the level of access, and therefore housing, which the Little Marlow Lakes Country Park can mitigate.
- 1.7 More recently, Natural England have discussed the site in detail with Buckinghamshire Council. In February 2023, they highlighted concerns that require further evidence, around the issues of the wastewater treatment works, the placement of promoted routes within the site (i.e. avoiding “pinch points” and a “merry-go-round” effect in visitor routes) and capacity.
- 1.8 The visitor surveying and capacity estimates need to consider site specific features. These include the presence of the wastewater treatment works, and the extent to which it is viewed as an unpleasant intrusion by the public, as well as the railway line, Marlow Film Studios, access along the River Thames and fishing.

Little Marlow Lakes Country Park

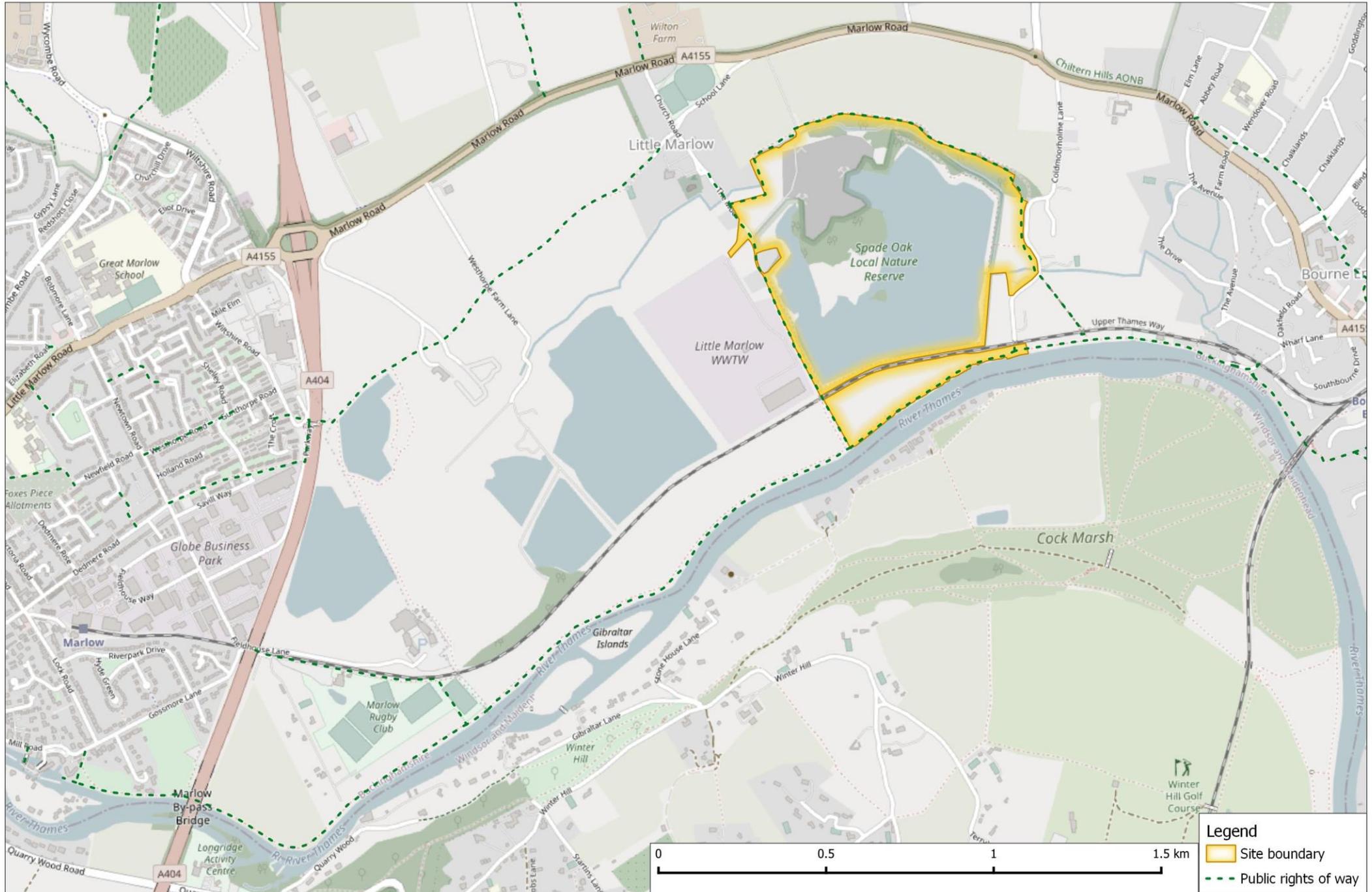
- 1.9 The site identified as potential for SANG capacity, shown in Map 1, is approximately 55 ha in size. The site is bounded on the northern edge by Little Marlow and agricultural fields along the A4155, Coldmoorholme Lane on the eastern edge and the water treatment works on the western edge. On the southern edge of the site, it is bounded by the River Thames and parts of this land are not directly

owned by the Council. However, the Council has explored use of this land between the railway and the river (currently included in the site boundary), as part of the SANG.

- 1.10 The site is comprised of Spade Oak Lake, the area of open water being approximately 24.5 ha in size, which is part of the nature reserve. The lake is fished recreationally by a reasonable number of regular anglers with permits. The site is important for wintering and breeding wading birds. The island to the northern/centre of the lake is closed to the public all year round, to protect breeding birds. The lake is surrounded by small belts of woodland.
- 1.11 A single main track offers a 2.5km walk around the lake which follows the water's edge, excluding a portion of the northern perimeter which is occupied by Marlow Film Studios (roughly 3.5 ha in size – see Map 2) and reduces easy access to the island. The circular route around the lake offers a pleasant walk mostly through woodland and riparian woodland/scrub, offering occasional views of the lake. Other paths, which offer a longer walk, include the agricultural fields to the north of the lake and the River Thames path to the south.
- 1.12 The Spade Oak car park provides direct access to the site from Coldmoorholme Lane on the eastern border, and a secondary smaller but primarily fisher's car park is to the western boundary of the site. The Spade Oak Pub and Restaurant¹ also provides parking for its customers, and it is possible that some pub users may park here and access the site during their visit.

¹ The Spade Oak Country Pub & Restaurant <https://www.thespadeoak.co.uk/>

Map 1: Locations of the specific site boundary within the wider Little Marlow Lakes Country Park.



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Figure 1: Site images (clockwise from top left); 1. kissing gate at western end of Thames Path, 2. kissing gate at eastern end of Thames Path, 3. Main car park, 4. Example path at northern end of the site, 5. Example of new path of western edge of site. 6. Example view over Spade Oak Lake.

2. Methods

2.1 Surveys at the site involved automated counters (trail cameras) to record visitor numbers, direct counts of visits by surveyors positioned at selected access points (tally counts) and face to face interviews with a random sample of visitors.

Access points

2.2 In order to derive an estimate of visitor numbers, it is first necessary to identify all the entry points onto the site. Potential access points were identified by an initial desk review (using aerial photographs, Ordnance Survey maps and website such as Strava² which show popular routes on sites), followed up with a site visit.

2.3 A total of 10 access points were identified (Table 1 and Map 1), and the number of visitors entering at each were then derived using one of 3 approaches:

- Direct visitor counts by a surveyor at 3 locations (the busiest and key points for interviews);
- Automated (motion-sensitive) cameras at a further 4 locations;
- A very low, nominal value assigned for the remaining 7 locations as it was clear from the site visit that these were hardly used.

Table 1: The individual access points and method by which we have surveyed each one.

ID	Description	Survey Method
1	Coldmoorholme Lane north entrance	Camera location 1
2	Spade Oak Pub	Visitor survey location 1
3	Railway crossing east	Camera location 2/Route data
4	Upper Thames Way east	Camera location 2/Route data
5	Upper Thames Way west	Visitor survey location 2
6	Railway crossing west	Visitor survey location 2

² <https://www.strava.com/>

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7	The Moor	Camera location 3 (eastern path) Camera location 4 (western path)
8	Off WWTW access road	Camera location 5
9	Church Road	Visitor survey location 3
10	WWTW access road entrance	Visitor survey location 3

Map 1: Access points and visitor surveying locations at the site.



Visitor interviews and direct counts

- 2.1 Surveyors undertook counts and visitor interviews within standard two-hour periods, standardised across survey points. Face-to-face interviews were conducted with a random selection of visitors, with the surveyor selecting the next person they saw after completing the previous interview, with only one person interviewed per group or party.
- 2.2 Alongside the interview data, surveyors maintained a tally of all people passing, recording the number of groups (of any size), individuals, minors, dogs and cyclists. These counts allow a comparison across survey points in terms of visitor volume/footfall and indicate the proportion of visitors that were interviewed at each location. Details of how the tally counts were conducted are summarised in Table 2.

Table 2: Visitor survey point details.

ID	Name	Description	Tally details
1	Spade Oak	Entrance point in from Spade Oak Car Park/Pub.	Those entering/leaving the site and passing the perimeter of the lake
2	River Thames	South west corner of the site, on the Thames path. Will understand level of footfall along the Thames path and how many are in the site, and for how long, as well as those heading to the water treatment works.	Entering/leaving into the site (inc. along Thames Path) and those entering/leaving via the railway crossing
3	Muschallik Road	Northern edge of the site, entry along Muschallik Road covering the perimeter path of the site.	Entering/leaving the site perimeter path and entering/leaving via Muschallik Road

Questionnaire design

2.3 The questionnaire (Appendix 1) was designed using Snap Surveys software³ and was conducted using tablet computers running the Snap Offline Interviewer app. The route that the interviewee had taken on site (or was planning to take) was drawn by the surveyor onto a paper map, using a unique reference number to match it to the corresponding questionnaire data and these routes were subsequently digitised into GIS.

Survey timings

2.4 Surveys took place during May 2023 and August 2023 (Table 3). Each survey point was surveyed for 16 hours, with 8 hours on a weekend day and 8 hours on a weekday. Surveys were split into 2 hour periods to provide breaks for the surveyors and comparable survey windows across all locations. Survey times comprised: 07:00 - 09:00, 10:30 - 12:30, 14:00 - 16:00, and 17:00 - 19:00. Every effort was made to avoid severe weather conditions.

Table 3: Summary of the survey dates.

Survey point	Weekday	Weekend
May		
1 Spade Oak	11/05/2023	14/05/2023
2 River Thames	12/05/2023	13/05/2023
3 Muschallik Road	12/05/2023	13/05/2023
August		
1 Spade Oak	11/08/2023	26/08/2023
2 River Thames	16/08/2023	12/08/2023
3 Muschallik Road	17/08/2023	27/08/2023

2.5 Surveys encompassed dates before the half-term period (half term started on the 29th May), and during the summer holidays (beginning 21st July) which should be borne in mind when drawing comparisons

³ <https://www.snapsurveys.com/>

between survey points. This temporal spread was necessitated by the weather and the commission.

Weather

2.6 Overall the weather during fieldwork was generally fair, with occasional showers and both hotter and cooler periods. During the first survey period in mid-May the weather was generally average, and surveys conducted in fairly settled weather⁴. However, weather in the second survey period in August was very unsettled and unpredictable, surveys were re-arranged to avoid a day of thunderstorms last minute, but still some surveys were conducted in periods of rain. Weather conditions on the dates when the surveyors were on-site are summarised in Table 4.

Table 4: Summary of weather conditions during survey work. There were 8 sessions at each survey point.

Survey point	Sessions with rain Wkdy	Sessions with rain Wknd	Average cloud cover (8ths) Wkdy	Average cloud cover (8ths) Wknd	Average temperature (°C) Wkdy	Average temperature (°C) Wknd
May						
1 Spade Oak	2	0	4	5	15	19
2 River Thames	0	0	7	7	12	12
3 Muschallik Road	1	0	7	8	12	12
August						
1 Spade Oak	0	2	4	7	17	16
2 River Thames	0	2	2	7	20	16
3 Muschallik Road	0	1	3	4	19	17

⁴ https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/summaries/mwr_2023_05_for_print.pdf

Analysis

- 2.7 All route and postcode data were analysed using QGIS 3.16⁵. Home postcodes were geocoded using Royal Mail PostZon postcode data from 2023. Only full, valid postcodes were used in analysis of visitor origins. Partial postcodes or named towns/villages were not included in any analysis due to the variation in precision.
- 2.8 The data collected was analysed using R and Minitab statistical software packages, with graphs and tables produced using both R and Microsoft Excel. The graphs include examples of stacked barplots, histograms, and box and whisker plots. Basic descriptive statistics (i.e. mean, median values within categories) are used to summarise the dataset. The output from appropriate statistical tests (Kruskall Wallis) is also used to identify statistically significant differences within the dataset to highlight results in which we have confidence of a genuine difference.

Automated counters

- 2.9 Automated counters (motion-sensitive trail cameras) were used to measure visitor numbers at 5 access points, supplementing the direct counts undertaken by surveyors at the busier/main locations. The cameras were housed in locked steel boxes that were camouflaged and designed to be discrete. These cameras were placed low to the ground and recorded the movement of passing feet of people, dogs, or bike wheels. The camera positioning therefore avoided the risk of recording personal information (e.g. faces).
- 2.10 The locations used for these automated counters are shown in Map 2. The automated counters were placed on site between the 2nd May and 14th May 2023 and therefore covered a full week. The recording dates coincided with when the surveyors were undertaking counts and interviews at the main entrance points.

⁵ <https://www.qgis.org/en/site/>

- 2.11 The automated counters for location 2 and location 5 were not found when attempting to retrieve the cameras and must have been vandalised and/or removed during the surveying. As these had been maliciously removed, we did not try to place a second camera at either location, and therefore no data were recorded for these locations.

Analysis

- 2.12 The cameras recorded around 4,260 images over the period of deployment. A sample of images were reviewed from each camera to allow us to determine the number of people, groups, dogs, and bikes passing in different directions. These checks allowed the proportion of 'false' images where the camera had been triggered by vegetation moving, animals or birds to be identified. Reviewing the images also ensured we could filter out periods where there were any issues with the cameras (such as vegetation growing up in front of the sensor or any tampering with them). Based on the results of the checks, the data were then scaled up to give estimates of visitor numbers at each location.
- 2.13 Initial sampling was based on hour-long blocks of time, with the hours selected based on the number of images taken per hour (evenly stratified to ensure the images were checked from busy and quiet periods). At least 50 different hour-long blocks were checked for each camera. This meant between 15% to 45% of images were checked from each camera. In total, 3,845 photos were reviewed.
- 2.14 We used a stratified sampling approach (a random sample taken evenly from within ranked subgroups) to calculate the number of people entering per hour. We also extrapolated the counts to give the number of people for the entire dataset of camera passes. In order to do this, we used the number of people entering in each hour block and correlated this to the number of passes recorded by the camera to produce an adjustment factor that could then be applied to convert the number of images taken to a number of people entering.

3. Results: visitor numbers

Tally counts

Total footfall

3.1 In total, over the 96 hours of fieldwork, 1,359 people were seen, including 109 minors and 415 dogs, in 832 groups.

Table 5: Totals of the number of people and dogs recorded in the separate survey periods and days. Values in brackets show the number of people/dogs as a per hour of surveying.

Survey period/day	People (per hour)	Dogs (per hour)
May	722 (15.0)	193 (4.0)
Weekday	155 (6.5)	64 (2.7)
Weekend	567 (23.6)	129 (5.4)
August	637 (13.3)	222 (4.6)
Weekday	369 (15.4)	127 (5.3)
Weekend	268 (11.2)	95 (4.0)
Total	1359 (14.2)	415 (4.3)

3.2 Table 5 shows the numbers of people and dogs recorded across all survey points across weekdays and weekends in May and August. Footfall was marginally higher in May, when considerably higher use was recorded at weekends than on weekdays. In August, the opposite was true, with higher footfall on weekdays. Numbers of dogs were higher in August, but at the weekdays rather than the weekends (as was recorded in May).

3.3 Unusual observations in the tally counts include the recording of a group of 65 runners (the Greenbelt Relay charity run) along the Thames and a group of local council planners on a site visit. The runners were included in the tally counts as charity events along the Thames seem a fairly common event, and the work group will have had little impact on overall numbers.

Group sizes and composition

- 3.4 The total footfall figures for both survey periods gave a mean group size of 1.64 people per group, with 1.51 adults and 0.13 minors per group. Groups were typically accompanied by 0.51 dogs on average and 0.06 people per group were on bicycles (around 4% of people were on bikes). No horse riders were recorded in the tallies.
- 3.5 The mean group size showed little variation across the site or between survey points and ranged from 1.65 (1: Spade Oak) to 1.63 (2: Thames Path). This did vary between seasons and the biggest variation was at 3: Muschallik Road, where in May the average group size was 1.42, but in August this increased to 1.89 people per group.
- 3.6 The highest number of dogs recorded per group were recorded at 3: Muschallik Road (0.52 dogs per group) and 2: Thames Path (0.53). However the figure for survey point 2: Thames Path was affected by the very high levels of use in the summer, with 0.63 dogs per group. The average number of minors recorded was 0.08 minors per group in May, but increased to 0.20 in August.

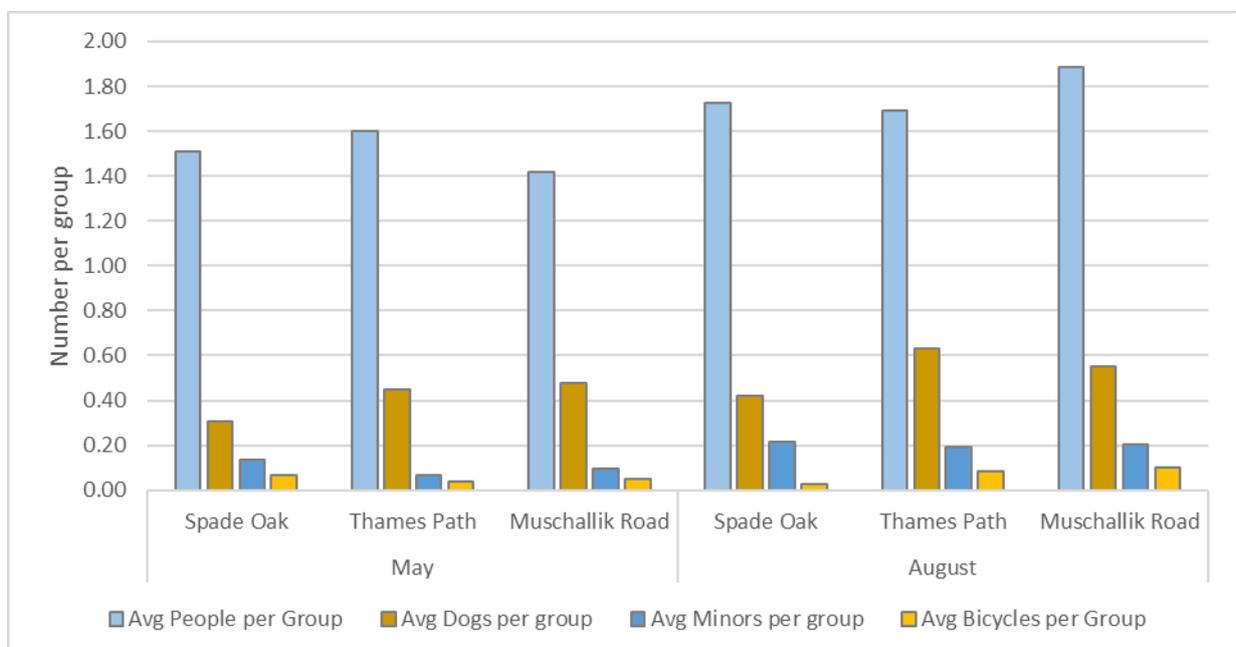


Figure 2: The mean number of people, dogs, minors and bicycles per group at each survey location

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- 3.7 Overall, and at all individual survey points, the average number of people per group was larger on weekends compared to weekdays, except for at 2: Thames Path. Across all three survey points during both seasons, mean group size was 1.60 people per group on a weekday compared to 1.67 on a weekend day.

People entering

3.8 The surveyors specifically logged people entering the site at each of the three survey points, often covering multiple individual access points. These are explored in more detail in the levels of use and capacity section.

3.9 A total of 763 people and 209 dogs were recorded entering the site during the survey hours across all survey points, which equates to 7.95 people and 2.18 dogs per hour. Table 5 provides a detailed summary of overall footfall and people entering the site per survey location. Entering figures at 3: Muschallik Road are based on only those entering along the road (off the A4155) and so are very low compared to the totals that were passing.

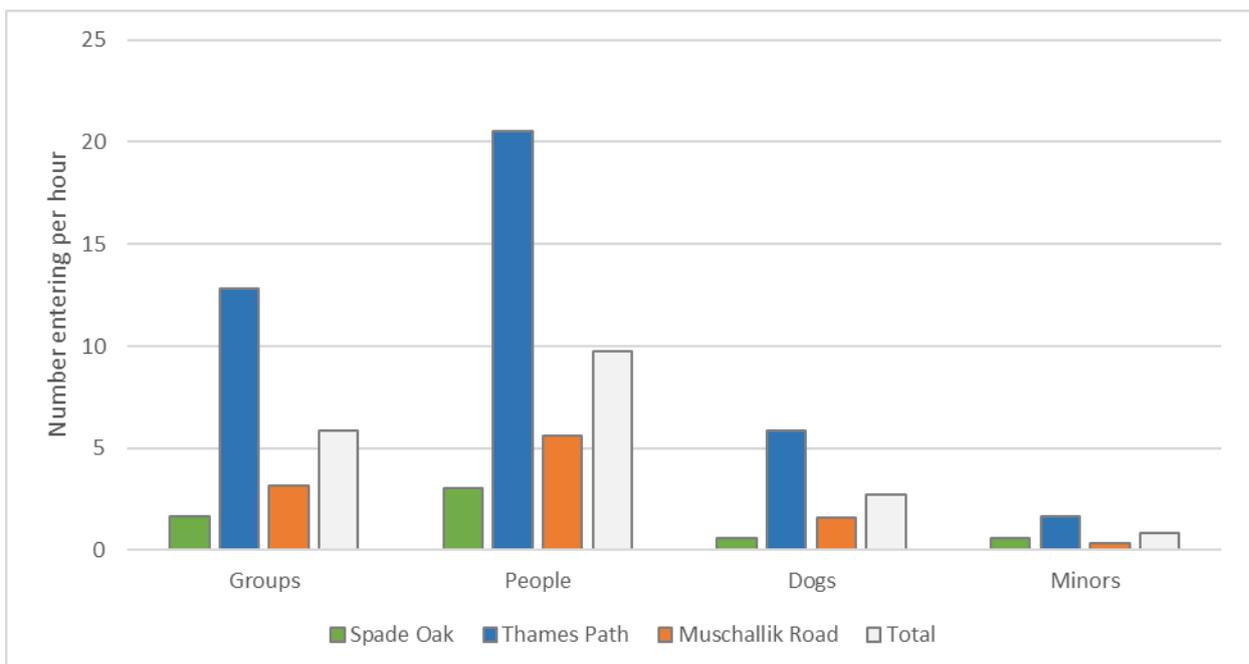


Figure 3: Summary of the number of people, dogs, minors entering per hour at each survey point. The total represents the average number entering across all 3 survey points combined.

Table 5: Numbers of groups, people, minors, dogs and bicycles recorded in terms of all people passing and specifically those “entering”. Values in brackets are the hourly rate.

Survey point	Footfall: groups	Footfall: people	Footfall: dogs	Footfall: minors	Footfall: bicycles	Entering: groups	Entering: people	Entering: dogs	Entering: minors	Entering: bicycles
May										
1. Spade Oak	59 (3.7)	89 (5.6)	18 (1.1)	8 (0.5)	4 (0.3)	19 (1.2)	32 (2)	7 (0.4)	4 (0.3)	0 (0)
2. River Thames	392 (24.5)	628 (39.3)	175 (10.9)	26 (1.6)	14 (0.9)	268 (16.8)	413 (25.8)	97 (6.1)	20 (1.3)	8 (0.5)
3. Muschallik Road	5 (0.3)	5 (0.3)	0 (0)	0 (0)	0 (0)	3 (0.2)	4 (0.3)	1 (0.1)	0 (0)	0 (0)
Total	456 (9.5)	722 (15)	193 (4)	34 (0.7)	18 (0.4)	290 (6)	449 (9.4)	105 (2.2)	24 (0.5)	8 (0.2)
August										
1. Spade Oak	69 (4.3)	119 (7.4)	29 (1.8)	15 (0.9)	2 (0.1)	34 (2.1)	66 (4.1)	13 (0.8)	15 (0.9)	2 (0.1)
2. River Thames	305 (19.1)	516 (32.3)	193 (12.1)	59 (3.7)	26 (1.6)	142 (8.9)	244 (15.3)	91 (5.7)	33 (2.1)	17 (1.1)
3. Muschallik Road	2 (0.1)	2 (0.1)	0 (0)	1 (0.1)	1 (0.1)	4 (0.3)	4 (0.3)	0 (0)	0 (0)	0 (0)
Total	376 (7.8)	637 (13.3)	222 (4.6)	75 (1.6)	29 (0.6)	180 (3.8)	314 (6.5)	104 (2.2)	48 (1.0)	19 (0.4)

Automated counters

- 3.10 Cameras were deployed to supplement the counts made by surveyors. In total the cameras recorded a total of 4,261 images. Camera 3, positioned near the wastewater treatment works but facing the path by the water's edge, was the busiest averaging 3.2 people per hour based on the sampled images. Camera 1 was similarly busy, averaging 2.6 people per hour based on the sampled images.
- 3.11 In total, from the sampled images, the cameras recorded an average of 6.5 people per hour across all hours. These data are summarised in Table 6. The table also gives an extrapolation for all hours of deployment based on the relationship between the number of images taken by the camera and the number of people counted in the sample of hours examined. The amount of variation explained in the fit varied across camera locations. The best fit was recorded at camera location 3, with 75% of variation explained. While we give both the hourly rate based on the images and the extrapolations, the hourly rates based on the sampled images are likely to be the more accurate figure for visitor numbers.
- 3.12 The results of these are used in the discussion of the levels of use of the site and capacity.

Table 6: Summary of data for individual cameras. The correlation R² is on a scale of 0-1, with higher values indicating a better fit between the number of passes and the count of people entering.

Camera location	Access point	Number of images taken by cameras	Number of hours with images	Number of hour blocks checked	Photos in the sample	People entering per hour – sampled images	People entering per hour – extrapolated estimate from all data	Correlation R ²	Notes on information recorded
1	1	2,108	206	51	478	2.59	0.47	0.63	Low counts, most triggers by animals.
2	3 & 4	-	-	-	-	-	-	-	Camera lost. Unable to provide data.
3	7	1,452	174	58	479	3.13	1.64	0.75	Moderate counts, other valid triggers by animals. Path closest to wastewater treatment works.
4	7	701	113	56	226	0.69	0.52	0.43	Low footfall, mostly triggered by animals and an instance of one person stood in front of the camera for a length of time.
5	3 & 4	-	-	-	-	-	-	-	Camera lost. Unable to provide data.

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4. Results: interviews

Number of interviews

- 4.1 A total of 399 visitor groups⁶ were approached across the 96 hours of fieldwork. Of these, a total of 275 (69%) were interviewed.
- 4.2 Of those approached for an interview, 38 groups (10%) had already been interviewed and were not re-interviewed. The percentage of people approached who had already been interviewed was highest at survey point 3: Muschallik Road, where 15 people (16%) had already been interviewed. This suggests a relatively high level of site fidelity (repeat visitors) at this specific location compared to others, with regular users who were seen on both days.
- 4.3 In total across all survey points, there were 83 refusals, which was around 21% of groups approached. Reasons for refusals include a large proportion of runners, particularly along the Thames, and also some family groups, commuters and anglers all with no time. In only one session were refusals related to poor weather.
- 4.4 The number of interviews at each survey point in each period ranged from 72 along the River Thames in August, to 32 at the Spade Oak (in both May and August). The interview totals are summarised in Table 7.

Group size and composition

- 4.5 Mean group size amongst the interviewees was 1.67 people per group compared with the average group size of 1.64 recorded in the tally data. The mean number of dogs per group was 0.83 from the interview data and 0.51 from the tally data. Both these suggest that the interviews were broadly representative of the visitors using the site, but slightly biased towards those with dogs.

⁶ i.e. parties of 1 or more people – i.e. lone individuals or multiple people visiting together. Only 1 person in each group was interviewed.

Table 7: Summary of interview totals by survey location. Each number is given followed in brackets by a percentage for the survey point (counting across each row).

	Number (%) refusals	Number (%) with language issues	Number (%) of groups already interviewed	Number (%) of interviews	Total (%) groups approached
May					
1. Spade Oak	8 (18%)	0 (0%)	5 (11%)	32 (71%)	45 (100%)
2. River Thames	17 (18%)	0 (0%)	8 (9%)	67 (73%)	92 (100%)
3. Muschallik Road	9 (16%)	0 (0%)	12 (22%)	34 (62%)	55 (100%)
May Total	34 (18%)	0 (0%)	25 (13%)	133 (69%)	192 (100%)
August					
1. Spade Oak	8 (17%)	1 (2%)	5 (11%)	32 (70%)	46 (100%)
2. River Thames	34 (30%)	2 (2%)	5 (4%)	72 (64%)	113 (100%)
3. Muschallik Road	7 (15%)	0 (0%)	3 (6%)	38 (79%)	48 (100%)
August Total	49 (24%)	3 (1%)	13 (6%)	142 (69%)	207 (100%)
Total	83 (21%)	3 (1%)	38 (10%)	275 (69%)	399 (100%)

Visit type (Q1)

- 4.6 The majority (256 interviewees, 93%) were on a day trip or short visit and had travelled directly from home that day. Of the remaining interviewees, 5 (2%) were staying with friends or family and 13 (5%) interviewees were on holiday or staying away from home, and one (<1%) was working (checking fishing permits).
- 4.7 In May, 96% (128) were on a short visit from home, while in August this reduced to 90% (128). This was largely driven by those on holiday in the area at the survey point along the Thames (survey point 2), where 14% (10) were on holiday – see Figure 4.

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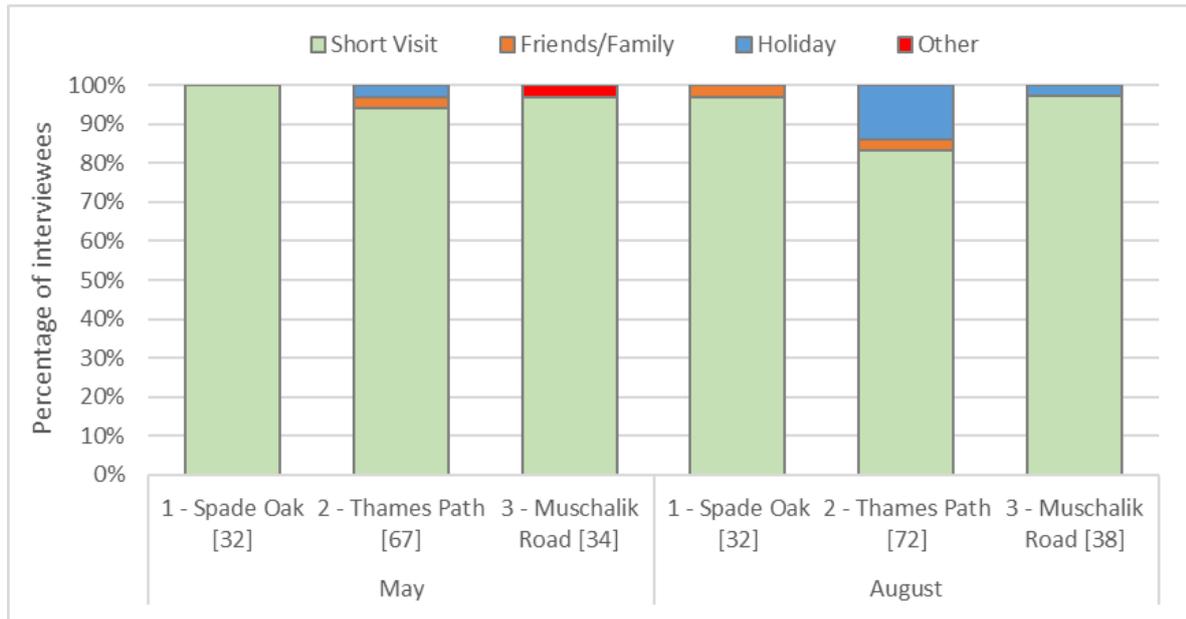


Figure 4: Summary of the visit types recorded at each survey point in the two different survey periods. Values in square brackets indicate the sample size.

Activities (Q2)

- 4.8 Main activities undertaken by interviewees are summarised in Figure 5. Overall, most interviewees were dog walking (43%, 117), or walking (36%, 100). Other activities accounted for the remaining 21%.
- 4.9 Of these other activities, 6% (16) were bird/wildlife watching, this was influenced by a rare bird present on one of the survey days. The percentage of bird/wildlife watchers peaked at 18% (6) at 3: Muschallik Road in May, but there was always a consistent level of use by those bird/wildlife watching on the site (see Figure 5). Cycling/mountain biking and jogging/running were fairly common, with 4% (10 interviewees) for each activity. Cycling was more common in the summer (most likely due to drier paths in August) and running more in the spring (most likely due to cooler weather in May). Only 3 anglers were interviewed, and other activities were diverse, often related to socialising (i.e. meeting up with friends, outing with the family, going to the pub).

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4.10 Results for each individual survey point were broadly similar to the overall picture with dog walking the most common activity at all survey points, except in August at 2: Thames Path and at 3: Muschallik Road. All anglers were interviewed at the Spade Oak main entrance (survey point 1).

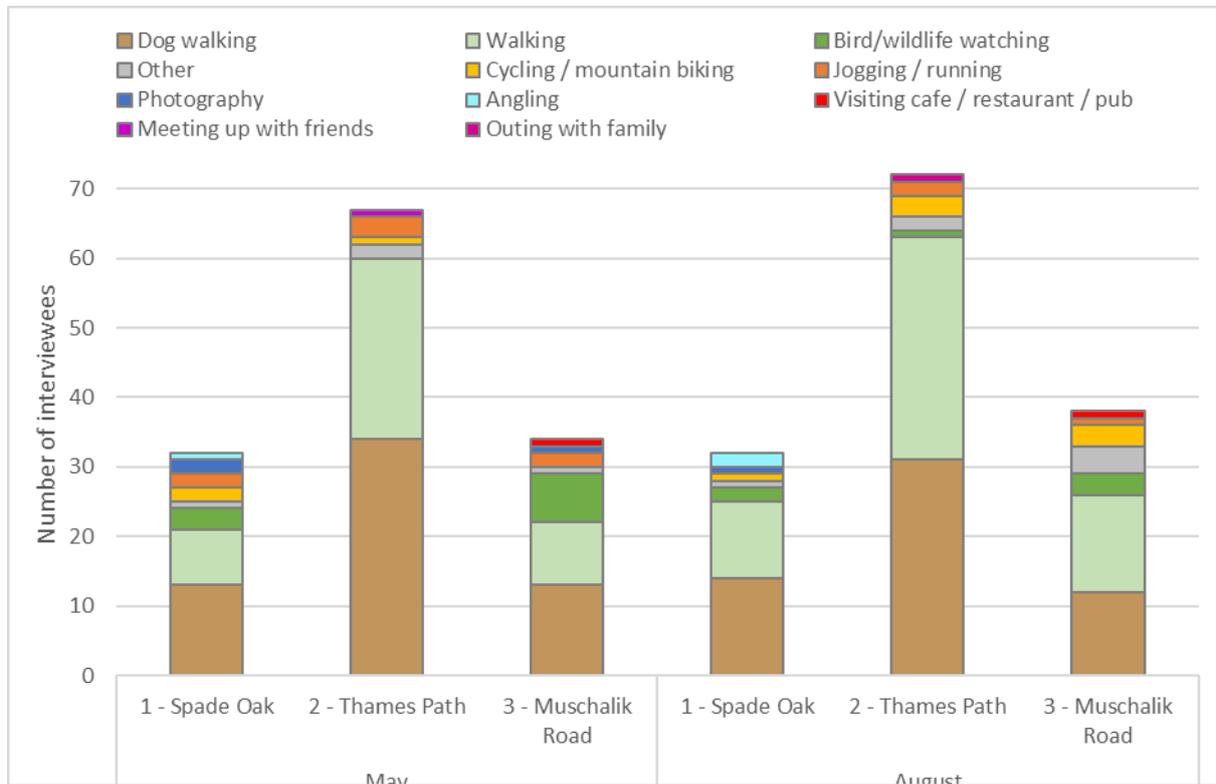


Figure 5: The number of interviewees conducting each activity recorded in the interviews, separated by survey point and season.

4.11 Based on the observed number of dogs with interviewed groups, 43% of interviewees had a dog with them. Of these 40% of the dogs were off lead at the time of the interview, highest at 2: Thames Path, 48%, compared to between 22% and 23% at the two other survey points.

Transport (Q3)

4.12 Interviewees were asked to state how they got to the site (by what modes of transport) with multiple responses possible (i.e. to account for those getting a train and then walking). Overall, just over half of interviewees arrived by car (56%, 153 interviewees) and a further 37%

(103 interviewees) arrived by foot. Some interviewees arrived by bicycle (4%, 12 interviewees) and 6 individuals used public transport.

- 4.13 The relative proportion of these modes of transport was fairly even between survey points; with a slightly higher proportion of interviewees arriving on foot at 1: Spade Oak (39%, 25). Differences were more obvious between seasons, with more interviewees arriving by car in August (59%, 84) compared to May (52%, 69). As a result there were fewer people arriving on foot (down 9%), although there were more people arriving by bicycle (up 3%).

Visit pattern

Visit duration (Q4)

- 4.14 Across all interviewees, the most common visit duration was between 1-2 hours, given by just over a third of interviewees (38%, 104 interviewees). The next largest category, accounting for just under a third was between 30 minutes and 1 hour (33%, 84). There were 17 interviewees (12%) who said their activity was more than 4 hours, this included site users on site for a very long time (i.e. anglers) and also those on site for a relatively short time, as part of a longer visit (i.e. long distance walkers/runners).
- 4.15 The average visit duration was around 90 minutes⁷. There was some very slight variation between survey points. Interviewees at 1: Spade Oak tended to be visiting for a slightly shorter period (an average of 79 minutes on site) compared to 90 minutes for the two other survey points. There was almost no difference in averaged visit duration between the two survey periods.

Visit frequency (Q5)

- 4.16 Roughly a third of interviewees (32%, 87 interviewees) stated that they visited '1 to 3 times per week' (i.e. approximately 40-180 visits per

⁷ Calculated by using the following values for each category: Less than 30 minutes = 20 mins; Between 30 minutes and 1 hour = 45 minutes; 1 to 2 hours = 90 minutes; 2 to 3 hours = 150 minutes; 3 to 4 hours = 210 minutes; More than 4 hours = 240 minutes.

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annum). Combining multiple categories, just over half of interviewees (53%, 147) indicated that they visited the site at least once a week. We estimated that on average each interviewee makes around 99 visits to the site per year⁸.

- 4.17 Across each of the survey points, there was some variation in visit frequency – see Table 6. First visits were more common at 1: Spade Oak and 2: Thames Path (14% and 15% compared to 7% at 3: Muschallik Road). At Muschallik Road, around a third of interviewees (33%, 24) visit 'Daily' or 'Most days', which equates to over 180 visits per year.

⁸ In order to calculate an annual number of visits for each interviewee, we scaled up the categories as follows: "Daily" = 350 visits, "Most days (180+ visits)" =200 visits, "1 to 3 times a week (40-180 visits)" = 110 visits, "2 to 3 times per month (15-40 visits)" =27.5 visits, "Once a month (6-15 visits)" =10.5 visits, "Less than once a month (2-5 visits)" = 3 visits and "First visit" =1.

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Table 6: Interviewees’ reported visit frequency to the site, separated by survey point. Values show the number of interviewees, with values in brackets a percentage of the survey point. The final column shows an averaged estimated number of visits per year.

Survey point	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 / haven't visited in past year	Total	Average visits per year
1: Spade Oak	7 (11%)	4 (6%)	19 (30%)	5 (8%)	10 (16%)	10 (16%)	9 (14%)	64 (100%)	88
2: Thames Path	12 (9%)	13 (9%)	44 (32%)	9 (6%)	17 (12%)	22 (16%)	21 (15%)	139 (100%)	87
3: Muschallik Road	11 (15%)	13 (18%)	24 (33%)	3 (4%)	12 (17%)	4 (6%)	5 (7%)	72 (100%)	129
Total	30 (11%)	30 (11%)	87 (32%)	17 (6%)	39 (14%)	36 (13%)	35 (13%)	275 (100%)	99

4.18 In May, more interviewees were regular visitors, with 63% (84 interviewees) visiting at least once a week, compared to 44% (63) in August. In May, 10% (13) were on a first visit to the site, compared to 15% (22) in August. The averaged number of visits per year in May were 115 per year, compared to 83 in August.

4.19 Of those who visited daily, around three quarters were dog walking (77%, 23 interviewees), 20% were walking (without a dog, 6 interviewees) and the remaining 1 daily visiting interviewee was visiting the pub. Of all the dog walkers, around 1 in 5 were daily visitors (20%).

Visit timings (Q6-7)

4.20 Interviewees were able to suggest multiple times of day in which they generally visited (selection of multiple categories possible) or suggest that their visit patterns varied (a single choice). In May, most interviewees suggested they visited in early morning (29%, 39 interviewees), while in August, most suggested it varied or did not know (35%, 49), but of those who did select a time period, most selected early morning (24%, 34 – see Figure 6).

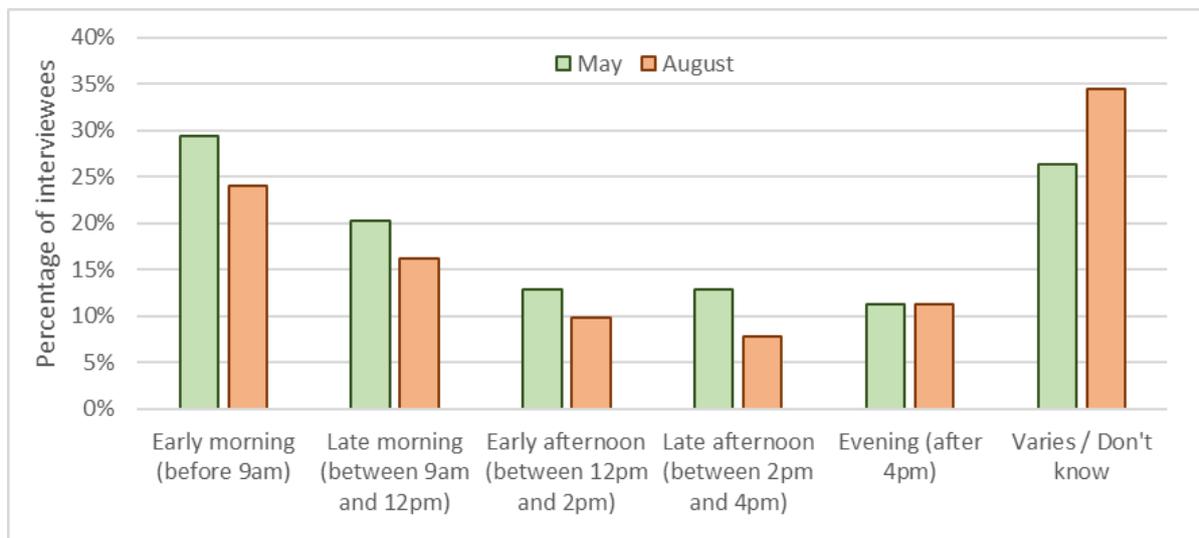


Figure 6: Temporal visiting patterns of interviewees, separated by survey season. Multiple responses were acceptable to indicate multiple time slots in which an interviewee visited.

4.21 When asked to consider times of the year when they visited, the majority of interviewees stated that they visit 'equally all year' (60%, 164 interviewees). Of those who selected one or more seasons, 24% (65 interviewees) stated that they are more likely to visit during the summer months (from June to August). Interviewees from the May

surveys were more likely to suggest they visited equally all year round (66%, 88), than those in the August surveys (54%, 76).

Reasons for site choice (Q8)

- 4.22 Interviewees were asked to state the reasons for choosing the site where they were interviewed, rather than another local site, with responses categorised by the surveyor and multiple reasons possible. Responses are summarised in Figure 7. The most common reason was because it was 'close to home' (31%, 84 interviewees) and for the 'scenery / variety of views' (28%, 78 interviewees). The responses highlighted the draw of the Thames, with 8% of interviewees (23) stating that the river, the Thames Path etc. as reasons for choosing this site.
- 4.23 Differences between seasons are also shown in Figure 7. In summer, with the greater range of visitors and infrequent visitors, there was a greater range in the responses and more visitors unable to give a main reason (Table 7).

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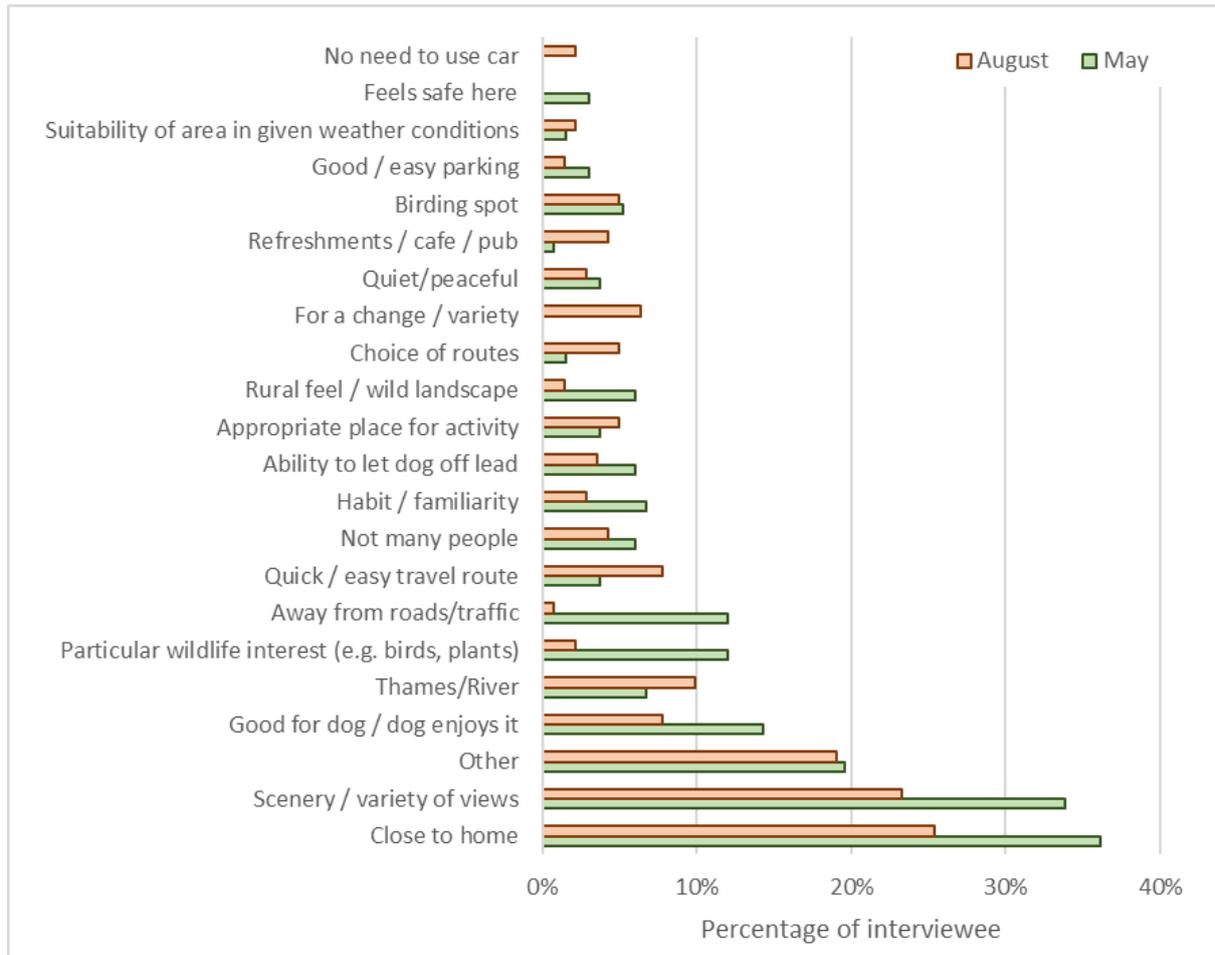


Figure 7: Interviewees reasons for visiting the site categorised by season. Note multiple reasons could be given.

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4.24 Interviewees were asked to give a single main reason for visiting the site from the multiple reasons given above. These were similar, but highlight the key factors. The most common reason was consistently ‘close to home’ in both May and August, with a greater proportion in May (27%, 36 interviewees) compared to August (20%, 28). Many factors had similar proportions, such as the second ranked “scenery / variety of views” (17% in both months).

Table 7: Interviewees’ single main reason for visiting the site, shown separately for the two seasons. Values shown are number of interviewees with percentages in brackets.

Main reason	May	August	Total
Close to home	36 (27%)	28 (20%)	64 (23%)
Scenery / variety of views	23 (17%)	24 (17%)	47 (17%)
Other reason	6 (5%)	19 (13%)	25 (9%)
Not sure / Don’t know	6 (5%)	17 (12%)	17 (6%)
Good for dog / dog enjoys it	10 (8%)	6 (4%)	16 (6%)
Particular wildlife interest (e.g. birds)	11 (8%)	2 (1%)	13 (5%)
Habit / familiarity	8 (6%)	3 (2%)	11 (4%)
Quick / easy travel route	3 (2%)	5 (4%)	8 (3%)
Away from roads/traffic	7 (5%)	1 (1%)	8 (3%)
Appropriate place for activity	3 (2%)	3 (2%)	6 (2%)
For a change / variety	(0%)	6 (4%)	6 (2%)
Not many people	4 (3%)	2 (1%)	6 (2%)
Refreshments / cafe / pub	1 (1%)	4 (3%)	5 (2%)
Ability to let dog off lead	3 (2%)	2 (1%)	5 (2%)
Choice of routes	(0%)	5 (4%)	5 (2%)
Rural feel / wild landscape	1 (1%)	2 (1%)	3 (1%)
No need to use car	(0%)	3 (2%)	3 (1%)
Suitability of area in given weather conditions	1 (1%)	1 (1%)	2 (1%)
Total	133 (100%)	142 (100%)	275 (100%)

Visitor routes (Q9-11)

- 4.25 Interviewees were asked whether their route at the time of interview was reflective of their usual route on the site. Most interviewees said that it was reflective of their normal route (66%, 169 interviewees). Of those who said it was longer or shorter than usual, 17% (44) stated that they were taking a shorter than usual route, and just 5% (13) a longer route.
- 4.26 A range of factors influenced the interviewees' choice of routes. Most visitors stated that it was habit / taking their usual route (23%, 62 interviewees) that influenced their choice of route on the day they were interviewed. Time (12%, 32) and weather (12%, 33) were important factors, followed by activity undertaken (8%, 22) and following a marked trail (8%, 22), which could include the Thames path. Furthermore, 4% (12) explicitly mentioned the Thames/ the river.
- 4.27 All interviewees completed a map for their route, resulting in 275 routes being digitised in GIS. Route lengths ranged from 455 m (an interviewee who parked along Muschallik Road and went to see a rare bird in the next field) to 52 km (an interviewee running the Thames Path from Windsor to Reading). The median route length was 4.4 km (and the mean was 5.3 km). Routes, as mapped, are shown in Map 3.
- 4.28 Routes were longer than might be expected for activities at the site, such as dog walking, which was observed to have a median length of 4.1 km (116 interviewee routes). This is higher than is typically observed (see Thames Basin Heath SANG guidelines of 2.5 km⁹), but is related to the geography of the site, with paths around the lake (which the minimum circular route possible is 2.6 km) and long linear routes along the river and the moderate level of local housing, meaning visitors have to walk some distance already if arriving on foot. When clipped to the site boundary (with a 50m buffer applied to join up the path between Spade Oak car park and the Thames), the maximum

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https://www.woking2027.info/supplementary/tbhspaspd/updated_sang_guidance_August_2021.pdf

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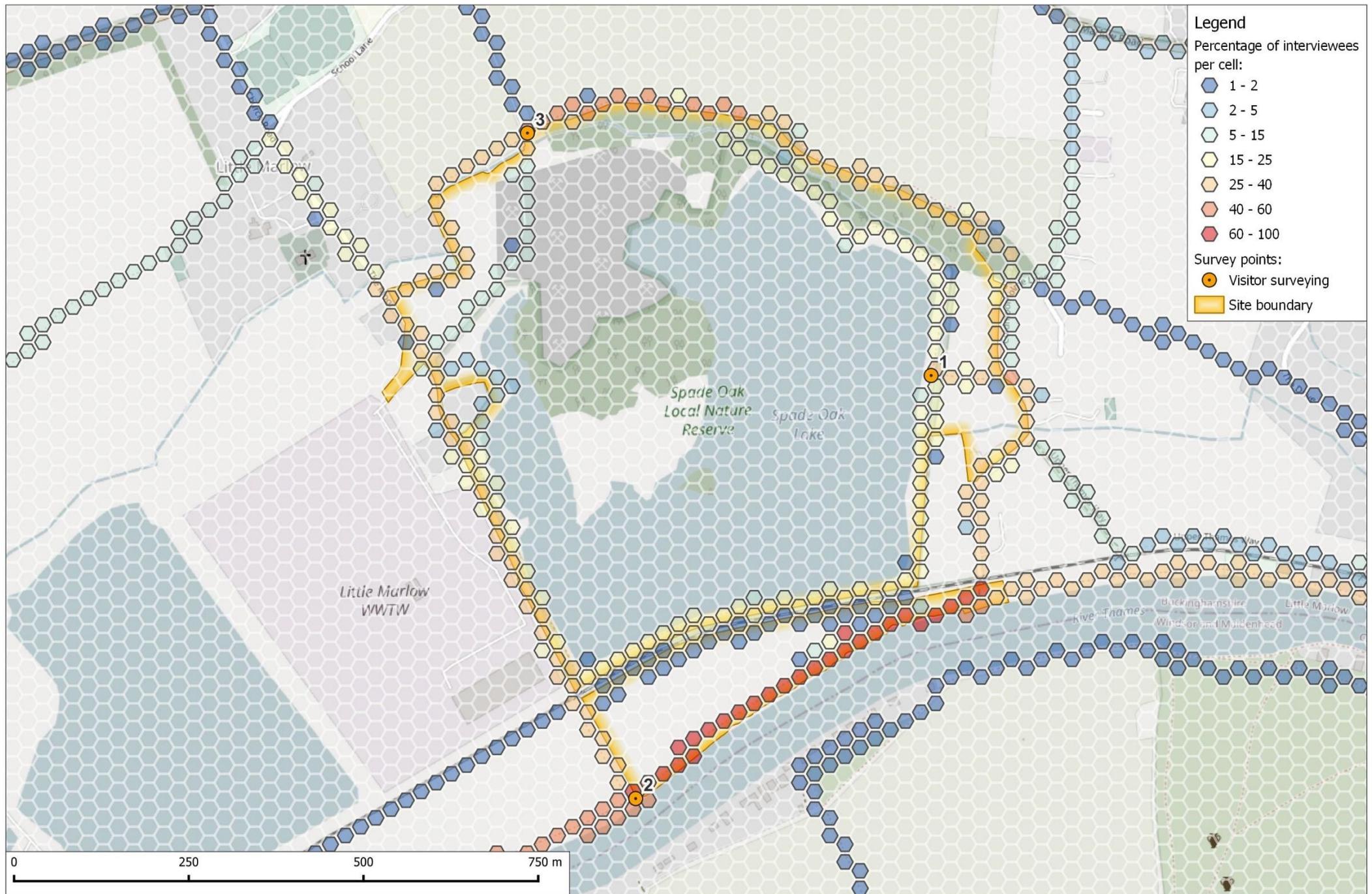
route length is 4.5 km, and the mean and median are 2.1 km and 1.8 km respectively.

- 4.29 Map 4 shows route density using a heat map derived from 25m cells. All paths are used within the site and little of the site, aside from that which is not accessible (the lake) or set aside for nature (the peninsula in the lake), is not accessed. Around 65% (180) of all interviewees had routes along the Thames, and the highest number of interviewees routes were at survey point 2 (Thames path) where almost three-quarters of routes went through this survey point during their visit (197, 72%). Approximately 40% of those interviewed had routes on the western side of Spade Oak lake (i.e. along the path beside the water treatment works), 33% along the eastern edge and 20% along the southern edge.

Map 3: Interviewee routes shown as light blue lines with overlapping routes shown as darker blue lines.



Map 4: Interviewee routes shown as a count using a 25m hexagonal grid to express the percentage of interviewees through each cell.



Possible unpleasant intrusions (Q12)

- 4.30 Interviewees were asked whether the wastewater treatment works adjacent to the site boundary impacted their visit. The majority (66%, 181 interviewees) said that the proximity of the wastewater treatment works did not impact their visit, whilst 30% (82) stated it did (even if only sometimes or occasionally).
- 4.31 In August, 35% of interviewees stated that the wastewater treatment works impacted their visit, compared to just 25% in May (see Table 8). The interviewees at survey point 1: Spade Oak were most impacted, with the highest recorded percentage of 44% in August stating that the water treatment works impacted their visit.
- 4.32 Interviewees were asked how their visit was impacted. 7 stated they changed their route, and 2 that they would then leave the site, but most simply stated that it was unpleasant to have to smell and therefore possibly did not have any other impact.

Table 8: Number and percentage of interviewees who stated that the wastewater treatment works impacted their visit (even if just occasionally), shown separately for survey points and season.

Season	1 - Spade Oak	2 - Thames Path	3 - Muschallik Road	Total
May	8 (32%)	17 (22%)	8 (26%)	33 (25%)
August	17 (44%)	25 (40%)	7 (17%)	49 (35%)
Total	25 (39%)	42 (30%)	15 (21%)	82 (30%)

Suggested improvements (Q13)

- 4.33 Interviewees were asked whether there were any changes they would like to see at the site with regard with how the area is managed for access (see Figure 6). Half of the interviewees suggested that no changes were necessary, or to leave the site as it is (137, 50%). Of those who did suggest improvements the majority related to better surfaced paths, particularly around gateways (49, 18%) and related

concerns, often from the same interviewees, around flooding and muddy paths (29, 11%).

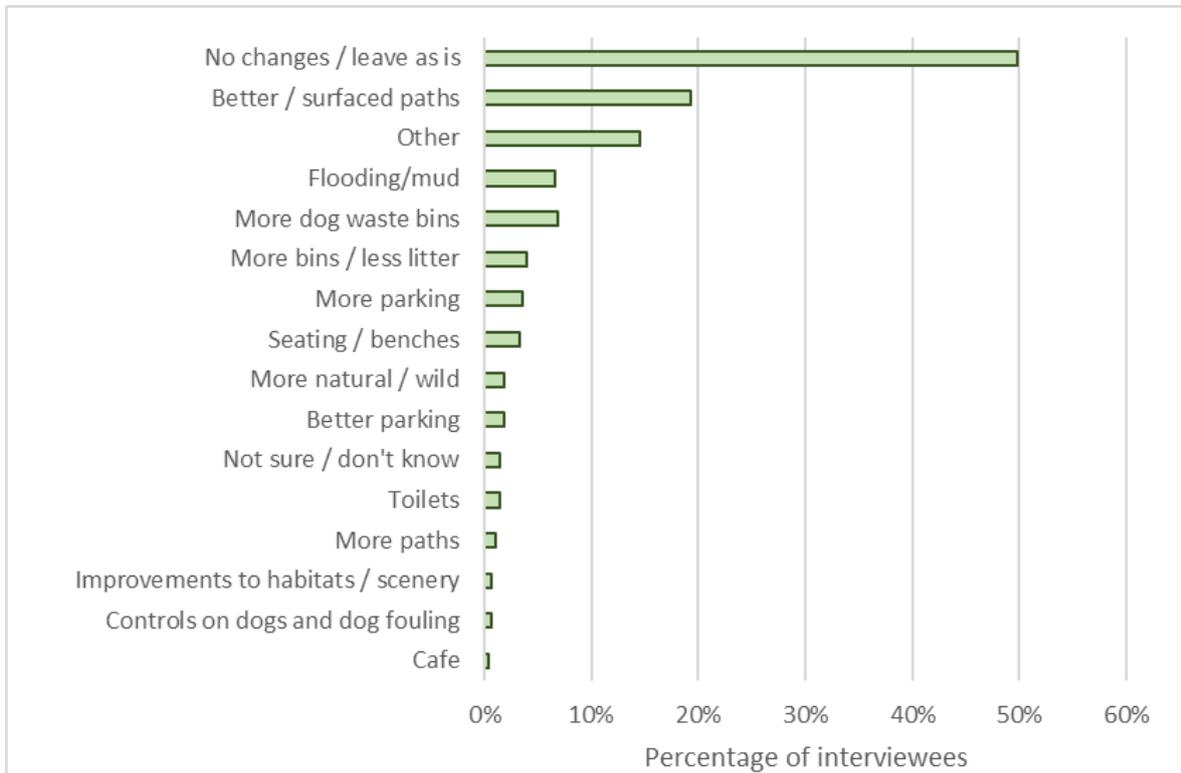


Figure 8: Responses to Q13 where interviewees were asked whether there were any changes, they would like to see with regard to how the site is managed for access.

Alternative site choices (Q14-15)

4.34 Interviewees were asked to name up to three other locations that they also visit for their activity. Roughly a quarter of the interviewees (41, 15%) stated there was nowhere else they would have visited and a further 3% (9) that they were not sure or did not know. The remaining 225 interviewees named one or more alternative sites; taking into account the multiple responses from some interviewees, there was a total of 929 responses. In August, only 12% (17 interviewees) could not name an alternative, whereas in May this was 25% of interviewees (33).

4.35 The named alternative sites given by interviewees are summarised in Table 9. The most common alternative site were other parts of the Thames or “the river” given by just over a third of interviewees.

Beyond this there were a diverse range of responses, with 132 separate named “sites”, of which there were 18 sites named by more than 6 interviewees, listed in Table 9.

Table 9: Alternative sites named by interviewees (Q14-16), the number of interviewees (and percentage) is given for each site. Interviewees could name up to three other sites they visit. Sites given by fewer than 6 interviewees are not shown.

Site name	Number interviewees (%)	Site name	Number interviewees (%)
Thames/River	42 (15%)	Flackwell Heath	9 (3%)
Cookham	30 (11%)	Marlow Common	8 (3%)
Marlow	20 (7%)	Burnham Beeches	7 (3%)
Winter Hill	15 (5%)	Wooburn Park	6 (2%)
Henley	15 (5%)	Little Marlow	6 (2%)
Cock Marsh	12 (4%)	Hughenden Park	6 (2%)
Wooburn Green	10 (4%)	Ski Lake	6 (2%)
Hurley	9 (3%)	Cookham Moor	6 (2%)
Cliveden	9 (3%)	Bloom Wood	6 (2%)

Other comments (Q16)

4.36 At the end of the interview, interviewees were asked if there were any final comments or feedback about their visit. A wide range of comments were given, including the importance of leaving the site as it is, negative responses to the film studios, about the wildlife on site and therefore keeping it undisturbed/natural, but also comments about flooding and muddy paths.

Visitor origins (Q17-18)

4.37 Full, valid postcodes were obtained for 252 of the 275 interviewees (91%), enabling them to be geocoded and mapped. The geographic distribution of interviewee home postcodes is shown in Map 5.

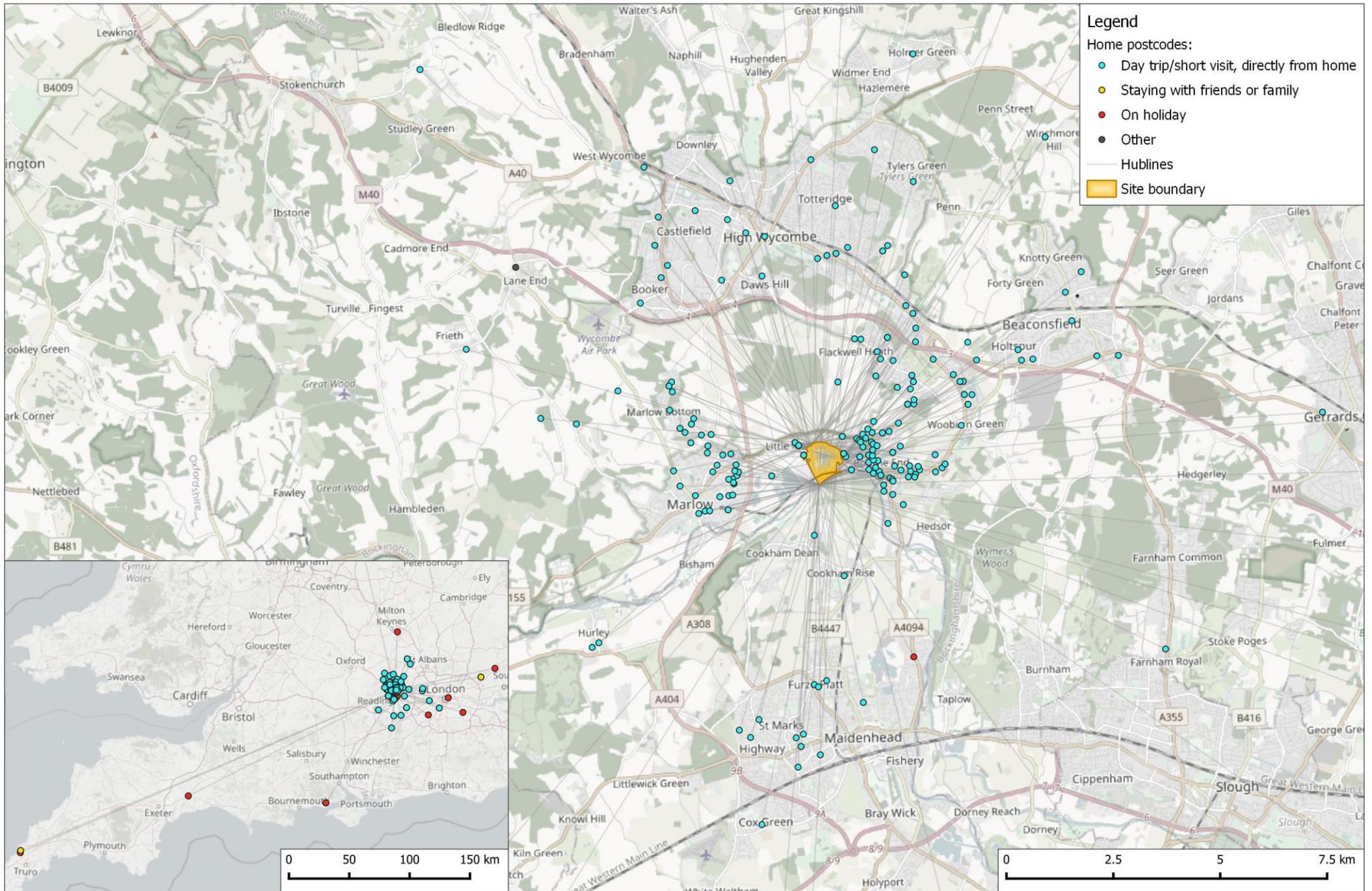
4.38 The vast majority of interviewees lived in Buckinghamshire (211 interviewees, 84%) and 21 interviewees (8%) lived in Windsor and

Maidenhead Royal Borough. The remaining 17 other local authorities were represented by just 1 or 2 interviewees each.

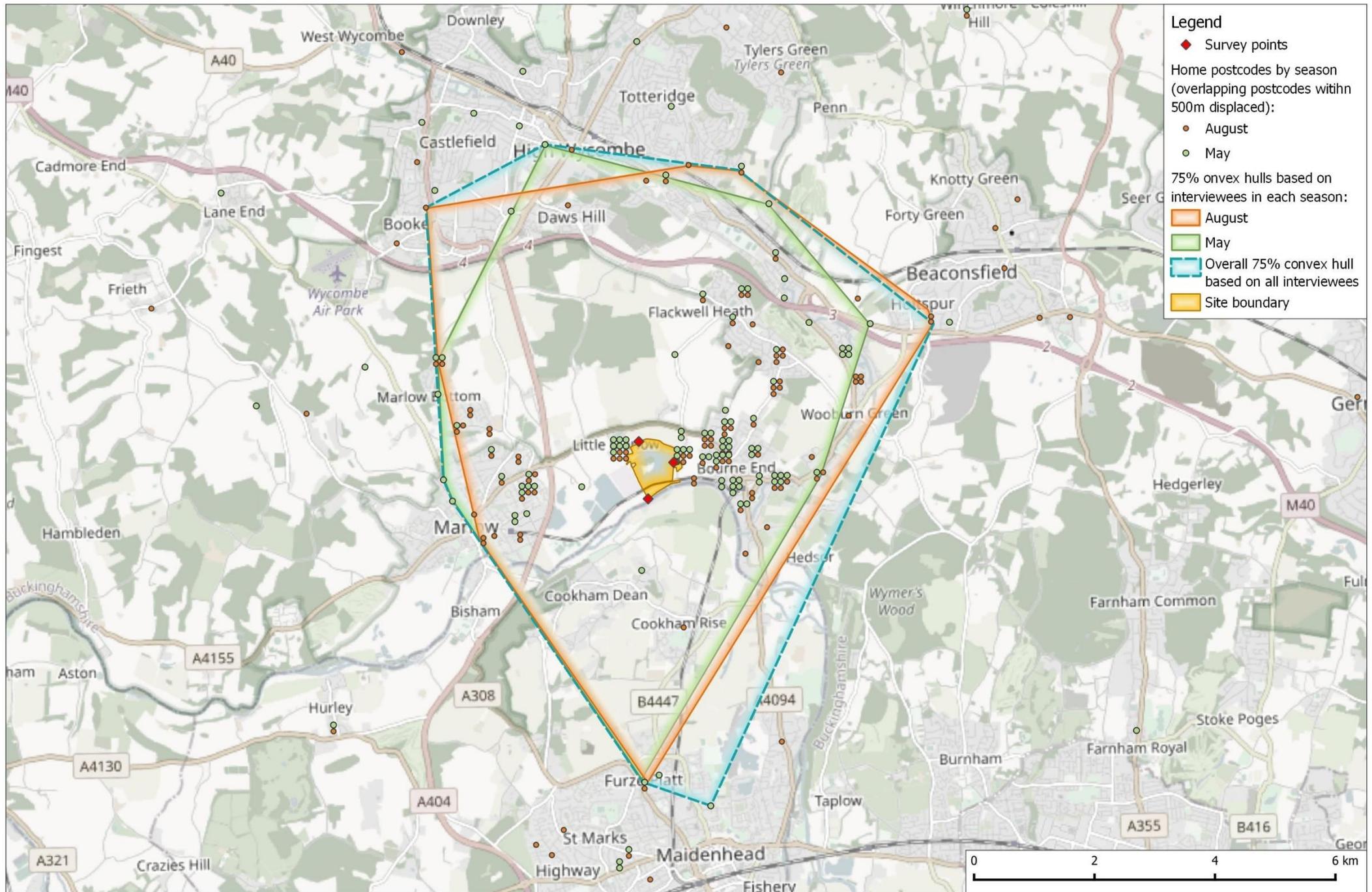
Linear distances

- 4.39 The linear (Euclidean) distance between the interviewee's home postcode and the survey point where they were interviewed was calculated for all interviewees where the home postcode was known. The median distance was 3.0 km and the third quartile distance (i.e. Q3, the distance within which 75% of interviewees lived) was 5.9 km. Excluding those interviewees who were staying away from home, the median distance was 2.7 km and the upper quartile distance was 5.3 km.
- 4.40 In May, the median distance was 2.5 km compared to 3.2 km in August, a difference which was statistically significant (based on the results of an appropriate Kruskal-Wallis statistical test: $H=3.29$, $df=1$, $p=0.070$). However, considering only those visiting from home, the median distance in May reduced slightly to 2.4 km, while the August value reduced to 2.9 km, resulting in a no longer significant difference ($H=1.21$, $df=1$, $p=0.271$).
- 4.41 Map 6 shows the postcode data and a convex hull (or minimum bounding polygon) plotted to highlight the area within which 75% of interviewees (on a short visit directly from home) lived. The 75% convex hulls are repeated for May and August separately, but are largely cover the same areas. The convex hulls cover the settlements of: Little Marlow, Bourne End, Flackwell Heath, Cookham Dean, Cookham Rise, most of Marlow, part of Wooburn and the edges of High Wycombe, Beaconsfield and Maidenhead.

Map 5: Home postcodes of interviewees, separated by visit type.



Map 6: Home postcodes of interviewees categorised by season. Convex hulls show the area of the 75% nearest postcodes, also separated by season.



5. Discussion and implications for SANG use

Key metrics from the visitor survey

5.1 Visitor survey results indicate that the site draws people from the villages of Little Marlow, Bourne End and Cookham, but also from neighbouring towns and even further afield to conduct a range of recreational activities; including, but not dominated by, walking and dog walking. Around half arrived by car and use of the site was largely occasional, but mostly by very local people. Key metrics from the survey are summarised in Table 10.

Table 10: Some key summary metrics for all visitor survey points combined and selected groupings.

Visitor metric	Result
Number of survey points	3
Total hours fieldwork	96
Mean group size	1.6
Mean number of dogs per group	0.5
Number of interviews	275
% interviewees on short day visit from home	93%
% interviewees activity: dog walking	43%
% interviewees with a dog	43%
% interviewees activity: walking	36%
% interviewees arriving by car	56%
% interviewees visiting daily or more than once a day	11%
% visiting because it is close to home	23%
Average number of visits per year per interviewee	99
Median distance to home postcode (km, all visitors)	3.0
75th percentile for postcode data (km, all visitors)	5.9
Median distance to home postcode (km, those visiting directly from home)	2.7
75th percentile for postcode data (km, those visiting directly from home)	5.3
Median route length (km)	4.1

Limitations

- 5.2 Interviews were only conducted with a subset of visitors, and while every effort was made to ensure a random sample, some types of visitors such as those running or cycling are harder to intercept and persuade to stop and be interviewed. Runners were common in the tallies and therefore are underrepresented.
- 5.3 The surveys were conducted in both May (term time) and August (summer school holidays) and can be seen to reflect the range of use of the site. The weather conditions were fair and there was little indication that weather influenced the survey results.
- 5.4 One of the cameras placed to count visitors was vandalised and therefore important information is missing about the access from the south-east corner. This has been extrapolated using route data (see current levels of use section), which is a valid approach, but was not the ideal approach.
- 5.5 The surveys took place well after any restrictions on movement associated with the Covid pandemic had been lifted. Nonetheless, the pandemic may still have had some influence over access patterns. There was an increase in dog ownership and the use of local greenspaces during the pandemic (Morgan et al., 2020; Ugolini et al., 2020) which may mean access patterns for many have changed in the long term.
- 5.6 In the rest of this section we consider the levels of use and implications of the results in terms of mitigation requirements.

Current levels of use

- 5.7 The tally count recorded an estimate of 28.22 people entering per hour during the survey, from three tallied points. The camera locations added a further 6.49 people entering per hour (based on the simple raw sample from 50 1-hour blocks). Finally, 3 access points, not covered by these above methods, were accounted for based on route

data and accounted for 25.42 people entering per hour¹⁰. These access points include the south-east corner of the site along the river Thames, which is one of the busiest areas, and was due to be surveyed by a camera (but was unfortunately vandalised).

- 5.8 This gave a total of approximately 61.57 people entering per hour, which equates to 1.12 people per hectare per hour (based on the area of the site). The data are summarised in Table 11. The estimates indicate around 65% of people enter the site along the Thames Path – a conservative estimate, given the camera placed here was vandalised and so the estimate is based only on route data from the visitor survey points. Anecdotally many people access at this point and only walk 100 to 200m along the river and then return (as indicated by the wear of the path). These individuals will not have been picked up by the route entry method we were forced to use, as they will be unlikely to be interviewed at any of the survey points and therefore do not currently contribute to the level of use, which would be considerably higher if we had.

¹⁰ Calculated using entering per hour value at known access points (35.71), and the percentage of routes entering at these locations (59%), to infer the entering per hour values for unknown locations, based on the percentage of routes at unknown locations – see Table 11.

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Table 11: Summary of the estimates of people per hour entering the whole site, by access point.

	Access point	Number of routes passing through point	Number of routes entering through point	Entering per hour	Entering per hour – extrapolated estimates	Method for entering per hour
1	Coldmoorholme Lane north entrance	68 (25%)	22 (8%)	2.59	2.59	Camera data
2	Spade Oak Pub	71 (26%)	30 (11%)	3.06	3.06	Tally count
3	Railway crossing east	107 (39%)	56 (20%)	-	12.11	Route data
4	Upper Thames Way east	94 (34%)	57 (21%)	-	12.71	Route data
5	Upper Thames Way west	181 (66%)	25 (9%)	14.50	14.50	Tally count
6	Railway crossing west	78 (28%)	7 (3%)	6.03	6.03	Tally count
7	The Moor	68 (25%)	27 (10%)	3.90	3.90	Camera data
8	Off WWTW access road	12 (4%)	2 (1%)	-	0.61	Route data
9	Church Road	83 (30%)	24 (9%)	5.38	5.38	Tally count
10	WWTW access road entrance	123 (45%)	25 (9%)	0.25	0.25	Tally data
	Total per hour			35.71	61.13	
	Total per hectare per hour				1.11	

- 5.9 Excluding the land along the Thames from the site boundary would reduce the site by around 6 ha, to 49 ha. However, this removes some of the busiest access points (3, 4 and 5) and therefore greatly reduces the level of use estimates for the revised site. Removal reduces the people entering per hour to 21.83 and the overall per hectare figure to 0.45.
- 5.10 It should also be noted that SANG guidelines state "*The provision of open water is encouraged and desirable on sites. However large areas of open water cannot count towards capacity*". There is a potential view that the majority of the site area, as open water, does not count to the site area which therefore greatly increases the people per hectare per hour estimate. However, our view would be that, at this site, this is not appropriate due to the current dense screening of access. The open water provides a pleasant expanse to view and while not accessible by people to count towards the accessible area, the margins of the lake and the paths are wooded it is very difficult to see other site users. This creates the feeling of a quieter site, as opposed to an open site where other site users are more plainly visible. Finally, there is current uncertainty about the future of the Film Studios and the final area of this would likely need to be taken into account into final capacity estimates.

Additional capacity

- 5.11 Estimating how many more visitors a site might be able to absorb is not straightforward. A simple benchmark used by Footprint Ecology to identify when SANGs might be 'at capacity' assumes a site is at capacity with a visit rate of 1 person per ha per hour (e.g. Caals et al., 2019; Liley & Floyd, 2013). This benchmark is derived from Footprint Ecology data from a range of sites and represents an approximate mid-point in the range of visitor densities when comparing busy urban greenspaces to extensive tracts of semi-natural habitat and is intended as a guide only to give an approximate point at which a public greenspace might be feeling busy or overcrowded.

- 5.12 Our estimate of current use of the site is therefore 1.12 people per ha per hour entering the site. This would suggest there is no scope for additional use and the site may well feel too busy at this level. However, the current access is clearly not evenly distributed within the site. Access is weighted alongside the Thames, even more so than we have been able to recognise.
- 5.13 Removal of this area of land provides an estimate of 0.45 people per ha per hour entering the site – suggesting the site has capacity to accommodate more visitors, potentially an increase of around one-quarter more. This reduced site area is 49 ha and this would suggest the additional capacity would be equivalent to around 27.2 ha of new SANG provision.
- 5.14 It is important to recognise that the benchmark is intended as a guide, and a wide range of factors will influence how ‘busy’ a site actually feels to the visitor. A visitor’s experience is ultimately ‘a complex interaction between people and their internal states, the activity they are undertaking, and the social and natural environment in which they find themselves’ (Borrie and Roggenbuck, cited in Priskin & McCool, 2006). What might therefore feel overcrowded to one visitor will not necessarily be experienced in the same way by others and that creates difficulties in relying too heavily on thresholds or drawing comparisons. As such it is necessary to also review visitor data carefully and any estimates of capacity are an informed judgement, and we suggest further discussion with Natural England.

Appropriateness of the site

Busyness

- 5.15 As discussed above, the original site area examined has a level of access which is above the 1 person per hectare per hour threshold. However, this is limited to very specific parts of the site – exclusively the river Thames path, which is suggested to be too busy to be appropriate for SANG use. Removal of this area reduces the size of the site, but radically reduces the level of access and brings the site’s level of access well below the 1 person per hectare per hour threshold.

Making the site suitable for SANG based on capacity, accounting for concentrated access in certain areas.

Length of promoted route

- 5.16 The original suggested promoted route would be to provide a circular C- shape walk which takes in 3 sides of the Spade Oak lake and the river Thames path, but largely did not involve retracing steps, so is a “circular walk” (thus avoiding a route alongside the wastewater treatment works). However, concerns with this relate to the “doubling back” along the C-shape, and while some interviewees were observed doing this, the number was very small (just 9 interviewees).
- 5.17 A circular loop around the whole of Spade Oak would be the ideal, as it would be entirely within the reduced area of the site which has capacity and can provide a sufficiently long walk of 2.6km. However this would be forced to include the path along the wastewater treatment works.

Unpleasant intrusions

- 5.18 SANG guidelines state in the essential criteria for sites that “SANG must be free from unpleasant intrusions (e.g. sewage treatment works smells etc).” Concerns have been raised about the appropriateness of the site given the adjacent wastewater treatment works. The visitor survey has highlighted around a third of visitors do see the wastewater treatment works as an issue. Although most of these did not report how they are being affected (i.e. changing their route, or no longer visiting), there must be some assumed avoidance, which could potentially be accounted for. SANG guidelines have only been produced for Thames Basin Valley Heath Special Protection Area and as such the suitability of a potential SANG should be discussed in more detail with Natural England in light of the visitor survey.
- 5.19 Suggestions were made that an advertised circular walk could avoid the wastewater treatment works, however this would bring visitors alongside the river Thames which is the part of the site suggested to be too busy and over capacity.

- 5.20 Finally, there is a potential issue with the proximity of the railway line, as a noisy unpleasant feature of the site, as highlighted at other potential SANGs. However, at this site, trains are forced to run at a relatively slow speed due to the number of unattended pedestrian crossings and therefore it is not deemed a major issue.

Overall

- 5.21 There are some questions on the appropriateness of the site, which individually do not make the site unsuitable. Potentially the whole site could be considered, if allowing for the Thames path to be a busier area which is potentially also utilised. However, for an appropriate length circular route - which does not intersect the busy Thames path - the path alongside the wastewater treatment works must be used. We conclude that this does impact at the most a third of visitors, and therefore a proportion of visitors are likely to be deterred.
- 5.22 The above are potential discussion points firstly with Thames Water, to see what can be done to reduce odours (i.e. frequency of these, fly screening, thickening peripheral vegetation). And secondly, with Natural England to see what is appropriate in terms of utilising certain areas of the site in terms of agreed capacity, the promoted route and the impact of the water treatment works.

Improvements at the site

- 5.23 Any mitigation measures should be effective, reliable, timely, guaranteed to be delivered and as long-term as they need to be to achieve their objectives. For the site to function as an alternative and draw more visitors, improvements will be essential. We suggest the following improvements, alongside resolving issues of unpleasant intrusions and levels of access.
- 5.24 There is potential scope to alter the proposed site boundary, with the removal of the busy Thames Path and addition of other land immediately adjacent of the assessed site boundary. Some or all of the land to the north, up to the A4155 would have obvious potential, given it currently has no public access.

- 5.25 The habitat on site, largely fringing scrub and woodland, should be maintained as it helps screen site users from each other, while allowing open views over the lake. Along the Thames path, if inclusion of this area is considered suitable, then it could be the path which runs alongside the railway line is improved. This area suffers with flooding and a boardwalk or simply raising ground level of the path may help reduce this and separate SANG users from the busy Thames path. Some riverside screening may also assist to reduce the feeling of busyness from the Thames path traffic.
- 5.26 The site has limited parking and to provide for other users, not arriving on foot, further car parking provision would be necessary. The Spade Oak car park is large, but often full due to those using the Thames. A second car park, further away from this on the perimeter of the site would be important. An ideal location could be off the A4155 at the northern end of the site; providing ease of access and being a reasonable distance from the Thames.
- 5.27 A key concern raised by interviewees related to the condition of the paths which were often flooded and therefore regularly muddy, especially around gateways. Simple measures, such as better drainage, gravel and raising of paths could help resolve these issues. The site should also be fully fenced to ensure that dog owners feel comfortable around the railway line.
- 5.28 Other infrastructure would be better signage and communication to help promote the site to new visitors. On-site signage would also help raise greater awareness of the importance of the site for nature conservation.
- 5.29 Any improvements to the site should conform with standard practices for greenspace design and accessibility (Fieldfare Trust, 2005; Paths for all, 2016), but also to Natural England SANG guidelines (anon, 2021).

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Appendix 1: Questionnaire



Good morning/afternoon. I am conducting a visitor survey on behalf of Buckinghamshire Council to find out more about how people use this area for recreation. 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. Use the 'further details' box if they mention additional activities.*

- Dog walking
- Walking
- Jogging / running
- Bird/wildlife watching
- Cycling / mountain biking
- Angling
- Paddleboarding
- Canoeing / kayaking
- Photography
- Outing with family
- Meeting up with friends
- Visiting cafe / restaurant / pub
- Picnic
- Other, please detail:

Further details / other activities

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Q3 **Over the past year, roughly how often have you visited this location?** *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)
- First visit / haven't visited in past year
- Don't know
- Other, please detail

Further details:

Q4 **How long have you spent / will you spend here today?** *Single response only. Do not prompt.*

- 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 location at a certain time of day?** *Tick closest answers. Multiple answers ok. Do not prompt.*

- Early morning (before 9am)
- Late morning (between 9am and 12pm)
- Early afternoon (between 12pm and 2pm)
- Late afternoon (between 2pm and 4pm)
- Evening (after 4pm)
- Varies / Don't know
- First visit

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Q6 **Do you tend to visit this location more at a particular time of year for [insert given activity]?** *Multiple answers ok. Do not prompt.*

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

Q7 **How did you get here today?** *If necessary prompt with: What forms of transport did you use? Multiple response possible - e.g. train and bicycle.*

- Car / van
- On foot
- Bicycle
- Bus
- Train
- Other, please detail

Further details:

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Q8 **Why did you choose to visit this specific location today, rather than somewhere else?** *Tick all responses given. Do not prompt, tick closest answers.*

- Don't know / others in party chose
- Close to home
- No need to use car
- Quick / easy travel route
- Good / easy parking
- Refreshments / cafe / pub
- Choice of routes
- Away from roads/traffic
- Feels safe here
- Not many people
- Scenery / variety of views
- Rural feel / wild landscape
- Particular wildlife interest (e.g. birds, plants)
- Habit / familiarity
- Good for dog / dog enjoys it
- Ability to let dog off lead
- Appropriate place for activity
- Suitability of area in given weather conditions
- For a change / variety
- Other, please detail

Further details:

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Q9 **Which of those reasons would you say had the most influence over your choice of location to visit today?** *Single choice, tick their main reason only. List is based on their answers to Q8.*

- Don't know / others in party chose
- Close to home
- No need to use car
- Quick / easy travel route
- Good / easy parking
- Refreshments / cafe / pub
- Choice of routes
- Away from roads/traffic
- Feels safe here
- Not many people
- Scenery / variety of views
- Rural feel / wild landscape
- Particular wildlife interest (e.g. birds, plants)
- Habit / familiarity
- Good for dog / dog enjoys it
- Ability to let dog off lead
- Appropriate place for activity
- Suitability of area in given weather conditions
- For a change / variety
- Other reason

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- Q10 **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 (if applicable), **E** to indicate where they started and **X** to indicate where they finished. Mark the route with a solid line for the route already taken and a dotted line for the expected or remaining route, with arrows to indicate the direction.*

Enter the map reference below, or tick 'no map' if no route map completed.

- Map reference: map ref
 No map

- Q11 **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

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Q12 **What, if anything, influenced your choice of route here today?** *Tick closest answers, do not prompt. Multiple responses ok.*

- Weather
- Daylight
- Time
- Habit / usual route
- Other users (avoiding crowds, other dogs etc.)
- Group members (e.g. kids, less able)
- Avoiding muddy tracks / paths
- Followed a marked trail (e.g. Thames Path)
- Location of cafe/restaurant/pub
- Activity undertaken (e.g. presence of dog)
- Followed their dog
- Interpretation / leaflets / promotion / app
- Viewpoint / feature
- Direct route to work / shops etc.
- Sewage treatment works
- Other, please detail

Further details:

Q13 This site is close to the wastewater treatment works (sewage works). Does its proximity impact on your visit(s) at all? ***This relates to all their visits here, not just their visit today.***

- Yes (even if only sometimes/occasionally)
- No
- Don't know / first visit

Q14 **If so, how does it affect your visit?** *Do not read out or prompt. Tick all that apply.*

- I don't go near the water treatment works
- I don't visit as often as I would otherwise
- It depends on the weather conditions
- Other, please detail

Further details:

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Q15 **Where would you have visited today for [given activity] if you could not have visited here?** *Do not prompt. Ask for spelling if necessary.*

- Site name:
- Nowhere / wouldn't have visited anywhere
- Not sure / don't know

Q15a

Please could you tell me the name of 2 other locations that you also visit for [given activity]? *Do not prompt. Ask for spellings if necessary.*

Q16a **Site name:**

Q16b **Site name:**

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Q17 **Are there any changes you would like to see here with regards to how this area is managed for access?** *Do not give options or prompt. Tick closest option(s).*

- No changes / leave as is
- More parking
- Better parking
- More paths
- Better / surfaced paths
- More bins / less litter
- More dog waste bins
- Controls on dogs and dog fouling
- Facilities for dogs (e.g. training areas, washing facilities)
- Seating / benches
- Toilets
- Cafe
- Improvements to habitats / scenery
- More natural / wild
- Not sure / don't know
- Other, please detail below

Further details:

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Q18 **Do you have any further comments or general feedback about your visit and access to this area?**

Q19 **Finally, to identify how far people have travelled, what is your full home postcode?**
This is an important piece of information, please make every effort to record correctly. If necessary, reassure them that we don't want their full address, and it will only be used to work out where people are coming from.

Q20 *If visitor is unable or refuses to give postcode:* **What is the name of the town or area where you live?**

Q21 *If visitor is on holiday ask:* **Which town / area are you staying in?**

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

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TO BE COMPLETED AFTER INTERVIEW FINISHED.

Q22 Survey location:

- 1 - Spade Oak
- 2 - Thames Path
- 3 - Muschalik Road

Number of people in group (including minors)

Number of minors in group (under 18s)

Number of dogs with group

Number of dogs with group seen off lead

Q23 **Did the interviewee struggle with answering questions because English was not their first language?**

Tick if you feel this may have influenced their responses.

Q24 **Surveyor comments.** *Note anything that may be relevant to the survey, including any changes to the survey entry that are necessary, e.g. typos/mistakes/changes to answers/additional information.*