Multiple deprivation and geographic distance to community sport events — achieving equitable access to parkrun in England

Schneider PP*,[1], Smith RA[1], Bullas AM[3], Quirk H[1], Bayley T[1], Haake SSJ[2], Brennan A[1], Goyder E[1]

[1]*School of Health and Related Research, University of Sheffield, Sheffield, UK.*

[2]*Advanced Wellbeing Research Centre, Sheffield Hallam University, Sheffield, UK.*

[3]*The Centre for Sports Engineering Research, Sheffield Hallam University, Sheffield S9 3TU, UK.*

Corresponding author: Paul Schneider (p.schneider@sheffield.ac.uk)

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Abstract

Objectives

To evaluate geographic access to free weekly outdoor physical activity events ("parkrun") in England, with a particular focus on deprived communities, and to identify 200 locations for future events to maximize geographic access to parkrun.

Study design

This study is a cross-sectional ecological analysis of the socioeconomic disparities in geographic access to parkrun events in England at the end of 2018.

Methods

We combined geo-location data on all English Lower Layer Super Output Areas and parkrun events to calculate geodesic distances to the nearest event for over 32,000 communities in England. We use this measure of geographic access to summarise the relationship between access and socioeconomic deprivation, measured using the Index of Multiple Deprivation. We then used geographic coordinates of public green spaces in England to conduct a simple location-allocation analysis to identify 200 locations for future event locations that would maximize access.

Results

In England 69% of the population live within 5 km of one of the 465 parkrun events. There is a small negative correlation between distance and deprivation, indicating that access is slightly better in more socioeconomically deprived areas. Setting up an additional 200 events in optimal locations would improve access: the average distance to the nearest parkrun event would improve by 1.22 km, from 4.65 km to 3.43 km, and approximately 82% of the English population would live within 5 km of a parkrun event.

Conclusions

Over two thirds of the English population live within 5 km of a parkrun event, and contrary to our expectation, we find that geographic access is slightly better for those living in more deprived communities. Creating additional events may improve geographic access, but effective strategies will still be needed to increase engagement in new and existing events by those living in socioeconomically deprived areas.

Introduction

Insufficient physical activity is one of the leading causes of disease and disability worldwide [1]. In the UK, around one in six deaths is attributable to low levels of physical activity [2]. It is also a major contributor to health inequalities, as people from low socioeconomic backgrounds are both disproportionately likely to be inactive [3,4] and be affected by physical inactivity-related diseases [5]. Increasing the physical activity levels of the population is therefore high on the public health agenda: it not only has the potential to improve quality of life, reduce mortality rates and alleviate the strain on health and social care services, but also reduce the gap in health inequalities [6].

However, designing effective public health interventions that increase population physical activity is a considerable challenge [7,8]. Implementing such interventions in a way that does not increase health inequalities might even be more difficult. Studies have shown that programmes to increase physical activity often fail to reach deprived communities and those most in need, suggesting access to physical activity facilities shows spatial and social inequality [9,10]. In this regard, parkrun, an international movement which organises free weekly 5 km running and walking events in public spaces, might provide valuable lessons.

Since its founding in 2004, as a small event in London with 13 participants, parkrun has grown to become one of the world's largest mass sporting events, with up to 360,000 participants in more than 20 countries [11,12]. The volunteer-led events are often characterised as accessible and inclusive [13,14]. The organisation has been widely praised as being successful in encouraging participation particularly in individuals who were previously inactive [15,16].

Notwithstanding these subjective accounts, the expansion of parkrun in England, as elsewhere, has been largely grassroots, driven by *demand* rather than *need*. It might therefore be the case that parkrun events are primarily located in areas that are less deprived, while people living in more deprived communities may not have the same opportunities to participate. In 2019, Sport England announced funding to support the creation of 200 new parkrun events across England within three years, with the specific aim of increasing participation of individuals from lower socioeconomic groups [17].

The aims of this study are two-fold: firstly, to evaluate whether geographic access to parkrun events in England is equitable across areas with different levels of deprivation; and secondly, to identify 200 optimal locations for future events in order to improve geographic access, in particular for deprived communities.

Methods

Study design

This study is a cross-sectional ecological analysis of the socioeconomic disparities in geographic access to parkrun events in England at the end of 2018. All analyses were conducted on the level of Lower Layer Super Output Areas (LSOAs), which divide England into 32,844 geographic units which, on average, have a population of approximately 1,700. We assessed the relationship between access, defined as the distance (as the crow flies) to the nearest parkrun event, and socioeconomic deprivation, measured using the Index of Multiple Deprivation. In addition, we used information on public green spaces in England to conduct a simple location-allocation analysis, in order to identify 200 locations for future parkrun events that maximise access for the population.

Data sources

For this study, we combined data on three types of geospatial entities: 1) LSOAs, 2) parkrun events, and 3) public green spaces.

1) For all 32,844 LSOAs, we retrieved geographic locations, defined by the coordinates of its population-weighted centroid; 2017 total population estimates; and the 2015 Index of Multiple Deprivation (IMD) from the Office for National Statistics [18–20].

2) We included all 465 public parkrun events which were in operation in England by December 12th, 2018 - on this date, Sport England announced their plan to provide funding for setting up 200 additional parkrun events across England [21]. The locations of the events were obtained from the parkrun UK website [22].

3) The locations of public green spaces in England were retrieved from an open dataset of Ordnance Survey [23]. parkrun events are held in various settings and terrains, and do not always require a single 5 km loop - some events have courses that involve running a combination of shorter loops. After evaluating existing parkrun event courses, we decided to consider all public parks, gardens, and playing fields in England with an area of 0.1 km^2 or more potentially suitable for hosting events (n=2,842).

Variables

The two variables of interest were access to parkrun events and deprivation of LSOAs.

Access to parkrun was defined as the geodesic distance (as the crow flies) from LSOA's population-weighted centroid to its nearest event. For each of the 32,844 LSOAs, we computed the geodesic distances between its population-weighted centroid and all 465 parkun events that were in operation on December 12th, 2018, and then selected the shortest distance.

The socioeconomic deprivation of LSOAs was measured using the 2015 IMD. It is a measure of relative deprivation, which has been used in many similar studies. The IMD combines 37 indicators from seven domains (income, employment, education and skills, health and disability, crime, housing and services, and living environment) into a single score. The score ranges from 0 (least deprived) to 100 (most deprived) [24].

Other covariates, which are likely to affect the availability of parkrun events within an area (e.g. population density or demographics), were not taken into account, because we did not aim to assess to what extent deprivation independently 'explained' access. Rather, we sought to evaluate whether or not people living in deprived areas have better or worse geographic access, under the actual circumstances.

Analysis

Mean, standard deviation, median, interquartile range, and range were used as descriptive statistics. We then assessed the association between the IMD and the distance to the nearest parkrun event on the LSOA level. Our hypothesis was that more socioeconomically deprived areas had worse access, i.e. longer geodesic distances to the nearest parkrun event than less deprived areas. Pearson and Spearman correlation coefficients were computed using the LSOAs' total population as weights. We also conducted a stratified analysis, for which we grouped LSOAs into IMD quintiles (most, more, median, less, least deprived) and assessed access to parkrun events in each stratum.

Identifying optimal locations for new parkrun events We conducted a location-allocation analysis to solve the following problem. parkrun UK received funding to start 200 additional parkrun events; there are 2,842 public green spaces in England in which new events could be set up – which 200 locations should be selected, in order to maximise access for the greatest number of people?

More specifically, the objective was to minimise the population-weighted total sum of distances between all LSOAs and their nearest parkrun event. To identify the optimal 200 green spaces, we applied a simple greedy algorithm that consisted of two steps. Firstly, for each green

space, we evaluate how setting up a parkrun event would affect the sum of distances, given the locations of all existing events (i.e. for how many LSOAs this green space would be the nearest parkrun event, and by how much it would decrease the respective distances). Secondly, the green space with the greatest effect is selected and added to the set of existing parkrun events. This procedure is repeated 200 times.

More formally, the first step of the algorithm evaluates the following expression:

$$\underset{c \in C}{\operatorname{argmin}} \sum_{i=1}^{32{,}844} d_i(E \cap c) * p_i$$

The function yields the candidate green space c, from the set of all 2,842 green spaces C, which minimises the sum of the population-weighted distances between LSOAs and their nearest parkrun event. The total population of LSOA i is denoted p_i, and $d_i(E \cap c)$ denotes LSOA i's distance to the nearest parkrun event, which can either be an existing event from the set of 465 parkrun events, denoted E, or the candidate green space c, whichever is nearest.

In order to identify the optimal new locations for setting up 200 new parkrun events consecutively, the selection procedure is repeated 200 times. At each step, the single best candidate green space location is selected, added to the set of established parkrun events E, and removed from the set of available green spaces C. This means, the effect of the green space selected at step k is taken into account when selecting the kth+1 location.

We assessed the overall impact of setting up 200 new parkrun events on the geographic access to parkrun events in England. We also investigated the effects on LSOAs across IMD quintiles in a distributional analysis.

Data and source code availability

All data and the R source code that were used to generate the results of this study are provided on an open repository [25].

Ethical approval

Ethical approval was obtained from the Sheffield Hallam University Ethics Committee (ER10776545). We did not collect any personal information, and only used aggregate secondary data. The parkrun Research Board approved this research project, and four of its

Table 1: Descriptive statistics of LSOAs and parkrun events

	Mean (SD)	Median (Q25-Q75)	Range
LSOAs (n = 32,844)			
Population	1,693 (405)	1,612 (1,452; 1,834)	362-13,404
IMD	21.67 (15.59)	17.40 (9.65; 30.07)	0.48-92.60
Distance to the nearest event	4.65 (4.17)	3.39 (1.99; 5.83)	0.04-76.44
Parkrun events (n = 465)			
Catchment area* population	119,612 (74,290)	103,952 (68,837; 151,488)	7,855-628,010
Catchment area* LSOAs	71 (43)	62 (40; 87)	6-350

* Number of LSOAs/total population for which a given parkrun event is the nearest.

members (AMB, HQ, EG, SSJH) were actively involved in the interpretation of findings and writing of this manuscript.

Results

Descriptive statistics

As of 12th December 2018, approximately 7%, 69%, and 91% of the English population lived within 1, 5, and 10 km distance of a parkrun event respectively. Only 578,043 people (1% of the English population) lived more than 20 km from an event. The mean (SD) and median (IQR) distance to the nearest parkrun event were 4.65 (4.22) and 3.39 (1.99-5.83). The largest distance was observed for the 2,259 people living on the Isles of Scilly, who live about 76 km away from the next parkrun event on the mainland. On average, each parkrun event is the closest event for 71 LSOAs (43), with a combined population of 119,612 (74,290). Further descriptive statistics are provided in table 1.

Association between deprivation and access

There was a negative relationship between IMD and the distance to the nearest parkrun event: the (population weighted) Pearson and Spearman correlation coefficients were -0.15 and -0.18, indicating a small negative correlation. This means that more deprived LSOAs tended to have shorter distances to the nearest parkrun event, i.e. better geographic access.

The analysis of distances by IMD quintile in Table 2 shows that people living in the 20% most deprived LSOAs had the best geographic access, with a mean and median distance to the nearest parkrun event of 3.51 and 2.79 km. Depending on the metric, the worst access

was observed for LSOAs in the middle (mean distance = 3.36 km) or the less deprived group (median distance = 3.93 km). Further results of the distributional analysis are provided in Table 2.

Optimal locations for new parkrun events

Figure 1 shows the parkrun events (black circles) that existed on 12th December 2018 alongside recommendations for 200 additional event locations (red triangles), which minimise the sum of the population weighted geodesic distances from the LSOA centroids, i.e. maximise overall access to parkrun for the greatest number of people. The numbers correspond to the rank, where 1 is the location which would improve access the most. The names and exact locations of the selected 200 green spaces are provided in the appendix.

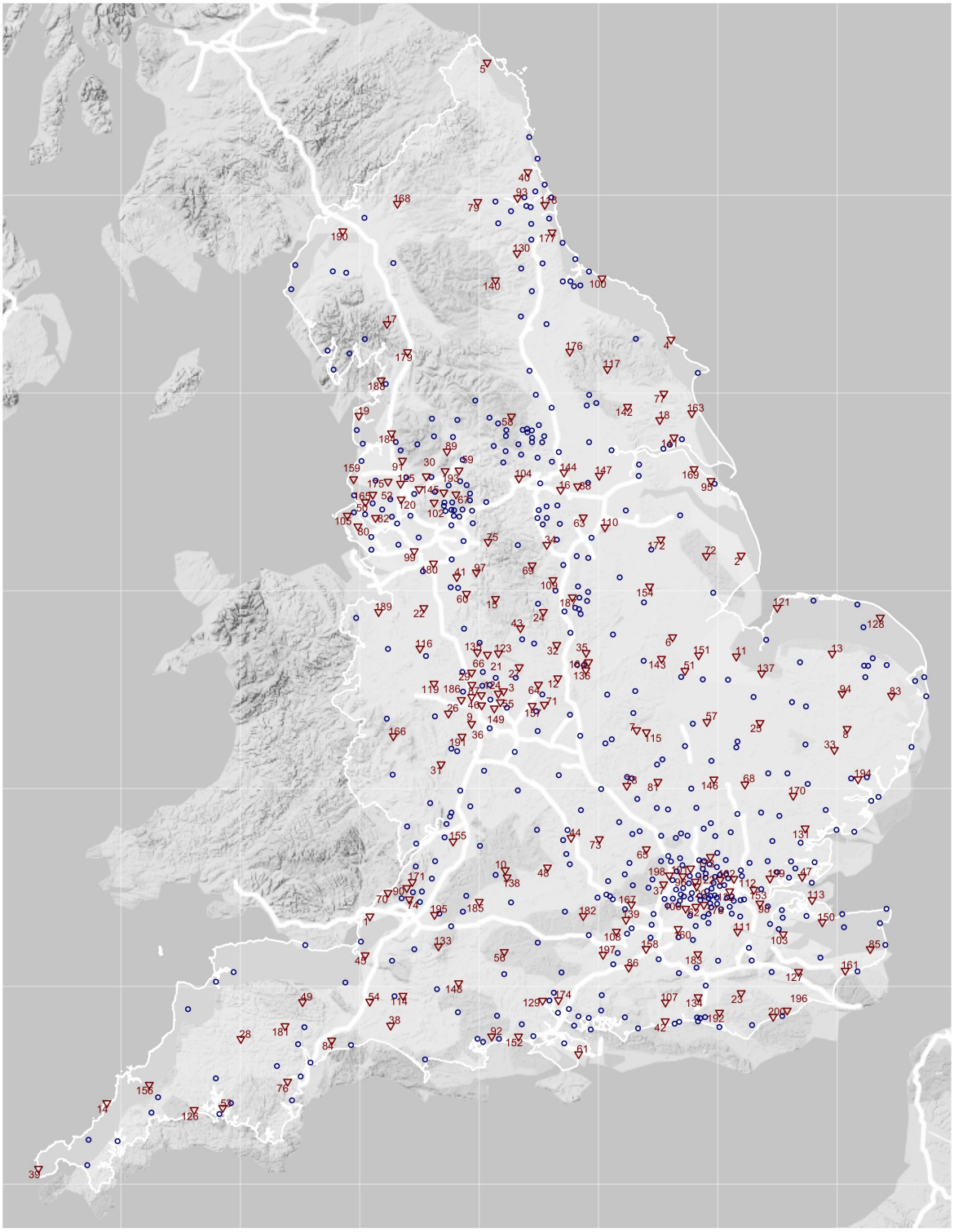

Figure 1: Map of England showing current parkrun events (blue circles) and recommended new event locations (red triangles) ranked in descending order of estimated effect on overall population-weighted access. Information on all 200

Table 2: Distributional analysis. The table shows the access to parkrun events before and after 200 new parkrun events are set up at optimal green spaces, stratified by IMD quintiles

	Current situation (December 12th, 2018)			After 200 new parkrun events are set up		
	Mean (SD)	Median (Q25-Q75)	Range	Mean (SD)	Median (Q25-Q75)	Range
Least deprived	4.93 (3.62)	3.91 (2.27; 6.67)	0.12-58.54	3.79 (2.61)	3.09 (1.92; 4.96)	0.12-25.58
Less deprived	5.21 (4.24)	3.93 (2.28; 6.99)	0.14-76.44	3.92 (3.04)	2.99 (1.84; 5.09)	0.14-48.02
Median deprived	5.36 (5.01)	3.68 (2.12; 6.83)	0.11-60.81	3.98 (3.55)	2.79 (1.70; 4.91)	0.11-33.74
More deprived	4.26 (4.38)	2.96 (1.76; 5.00)	0.04-59.44	3.03 (2.78)	2.27 (1.47; 3.49)	0.04-24.07
Most deprived	3.51 (3.01)	2.79 (1.71; 4.39)	0.07-36.17	2.43 (1.68)	2.12 (1.41; 3.02)	0.05-24.30
Overall	4.65 (4.17)	3.39 (1.99; 5.83)	0.04-76.44	3.43 (2.86)	2.59 (1.63; 4.16)	0.04-48.02

identified optimal green space locations are provided in the appendix.

We estimated that setting up new parkrun events in those 200 green spaces would improve access for around 16.5 million people (30% of the population) from 9,854 LSOAs. For these people, the distance to the nearest event would, on average, be reduced by 4.09 km (SD = 3.97). Overall, it would reduce the average and median distance to the nearest parkrun event from 4.65 and 3.39 km to 3.43 and 2.59 km. The percentage of people who live within 5 km of a parkrun would increase from 69% to 82%.

The distributional analysis in Table 2 shows, for each IMD quintile, geographic access under the current situation (12th December 2018) and after the creation of 200 new events. Overall, setting up 200 new events in the recommended green spaces would amplify the negative socioeconomic gradient in geographic access. The population-weighted Pearson and Spearman correlation coefficients changed from -0.15 and -0.18 before, to -0.20 and -0.23 afterwards, indicating that improvements in access to parkrun events were greater for more deprived LSOAs as compared to less deprived LSOAs. Nevertheless, the distributional analysis showed that the improvement in access was smallest for LSOAs in the most deprived quintile.

Discussion

As of 12 December 2018, the median distance to the nearest parkrun event was 3.39 km and more than two thirds of the English population lived within 5 km (the parkrun distance) of a parkrun event. Contrary to our expectation, we did not find that access was better for people living in less deprived areas. In fact, those living in the most deprived areas had the best geographic access to parkrun – it is rare in public health for inequalities to exist in this direction.

Our analysis has shown that setting up 200 new events in the recommended (optimal) green spaces in England would reduce the average distance to the nearest parkrun event by 1.22 km, increasing the percentage of English residents who live within 5 km of a parkrun to 82%. Moreover, the recommended expansion of parkrun would improve the geographic access for the most deprived areas more than the access of those living in more affluent areas.

The main finding, that geographic access to parkrun events is better in more deprived communities, is surprising. parkrun events are set up by volunteers, based on demand, not need. Studies have shown that the level of physical activity, and the availability of physical activity facilities generally declines with the level of deprivation [26] Opportunities for physical activity are often lacking in areas in most need [27]. parkrun events, in contrast, seem to be often held in or near deprived areas, and are free to attend, giving anyone equal access, irrespective of their socioeconomic background. Nevertheless, in a previous analysis, we found that participation in parkrun has a strong socioeconomic gradient with considerably higher participation rates in less deprived areas: about a third of all participants came from LSOAs in the least deprived quintile, while only 7% came from the most deprived quintile [28,29]. This suggests that providing the opportunity to participate in parkrun events, while a necessary first step to enable participation, has not been sufficient to engage people living in deprived communities [9]. This means, creating additional events in optimal locations could improve overall geographic access further, yet effective strategies will still be needed to increase equity in engagement in new and current events.

There are several strengths of this study that deserve mention. Firstly, it is the first study of geographic access to parkrun in England - therefore the approach is novel and the data untapped. Secondly the analysis makes use of large and rich datasets, with over 30,000 LSOA and over 400 existing parkrun events it is unlikely that individual outliers are affecting the results. The almost universal availability of parkrun events throughout the country provides a learning opportunity to explore socio-spatial determinants influencing physical activity behaviour on a national scale [16]. Our study contributes to the limited research in this area and identifies possible leads for further investigation.

However, there are also limitations. Most importantly, geographic access is not measured as travel distance, or travel time, but as geodesic distance. In some cases, for example where natural barriers like hills, lakes or rivers block routes, the actual distance travelled may be far in excess of the geodesic distance [30].

Furthermore, the list of green spaces that we considered as potential sites for future parkrun

events is neither comprehensive nor without limitations. Not all included green spaces may be suitable to host events (e.g. because of the terrain or the setting), and the list also does not contain all suitable places (e.g. many blue spaces such as beaches and promenades are not included).

Finally, our analysis has been concerned only with determining to what extent deprived communities have geographic access to parkrun events. We did not investigate what other factors independently explain access more generally. It should be noted, however, that a contributing factor for the negative relationship between IMD and access is likely to be population density: deprived areas cluster in urban areas, where also most parkrun events take place. Rural areas, on the other hand, may therefore have worse geographic access. Further studies are required to better understand wider determinants of access to parkrun and/or physical activity facilities more generally.

Studying barriers to participation in parkrun, other than geographic access, is likely to improve our understanding of the reasons why physical activity levels are lower in more deprived areas and may help to design more effective public health interventions to increase levels of physical activity in the population. Future research should build on this work and develop a model to assess the (cost-)effectiveness of setting up new events, and other strategies, not only in terms of improved potential access, but actual participation. This requires estimating the causal and marginal effects of different interventions on participation, and therefore physical activity levels, using longitudinal data and sophisticated modelling techniques.

Conclusion

In England in December 2018, 69% of the population lived within 5 km of a parkrun event. Creating 200 new events in the recommended (optimal) green spaces would further improve access, increasing this to 82%. Contrary to our expectation, we find that geographic access is slightly better for those living in more deprived communities. Given that participation rates are generally lower in deprived areas, improving access alone seems unlikely to significantly reduce inequalities in participation and physical activity. In order to design more effective strategies to improve engagement from deprived communities, a deeper understanding of the barriers to taking part in mass participation physical activity events is needed.

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Appendix

Table 3: List of all 200 recommended green spaces for setting up parkrun events to maximise geographic access.

Park name	Total wtd. average distance	% Change from previous step	Park area (km2)	Longitude	Lattitude
Plumley Park	4.59	-0.534	0.12	-2.915	51.354
Gunby Park	4.57	-0.490	0.47	0.195	53.179
unnamed	4.55	-0.446	0.13	-1.796	52.492
South Cliff Gardens	4.53	-0.435	0.14	-0.393	54.270
Market Gardens	4.51	-0.411	0.16	-1.932	55.671
The Well Head Fields	4.49	-0.365	0.10	-0.379	52.765
unnamed	4.48	-0.332	0.17	-0.680	52.295
Thornham Park	4.46	-0.310	0.30	1.083	52.302
Ley Hill Recreation ...	4.45	-0.303	0.20	-1.979	52.421
unnamed	4.44	-0.296	0.13	-1.782	51.587
unnamed	4.42	-0.284	0.14	0.155	52.668
unnamed	4.41	-0.276	0.19	-1.341	52.558
Neatherd Moor	4.40	-0.246	0.15	0.957	52.683
The Warren	4.39	-0.246	0.13	-5.118	50.410
unnamed	4.38	-0.236	0.15	-1.863	52.959
Brookfields Park	4.37	-0.233	0.29	-1.317	53.510
Ellergreen Park	4.36	-0.229	0.28	-2.771	54.349
The Park	4.35	-0.228	0.13	-0.486	53.863
Poolfoot Farm Traini...	4.34	-0.228	0.14	-3.007	53.885
Kensington Gardens	4.33	-0.228	1.07	-0.178	51.506
Burntwood Leisure Ce...	4.32	-0.228	0.10	-1.930	52.677
The Park	4.31	-0.221	0.13	-2.463	52.913
Possingworth Park	4.30	-0.220	1.34	0.195	50.966
Osmaston Park	4.29	-0.220	0.13	-1.462	52.893
East Fen Common	4.28	-0.219	0.21	0.353	52.332
Brinton Park	4.27	-0.216	0.11	-2.257	52.380
Kettlebrook Park	4.26	-0.212	0.35	-1.664	52.614
Parklands Leisure Ce...	4.25	-0.203	0.12	-3.995	50.734
Victoria Park	4.25	-0.202	0.13	-2.061	52.525
Clarence Park	4.24	-0.201	0.23	-2.285	53.606
Link Common	4.23	-0.200	0.20	-2.318	52.123
unnamed	4.22	-0.194	0.13	-1.349	52.727
Chilton Fields Sport...	4.21	-0.194	0.12	0.976	52.195
Queen's Park Sports ...	4.20	-0.194	0.12	-1.433	53.233
Watermead Country Pa...	4.20	-0.193	1.48	-1.104	52.686
Bromsgrove School Sp...	4.19	-0.187	0.11	-2.063	52.327
Stockley Country Par...	4.18	-0.185	0.17	-0.455	51.516
Parnham Park	4.17	-0.185	0.14	-2.741	50.802
Mayon Green	4.16	-0.186	0.14	-5.690	50.078
Bedlington Country P...	4.16	-0.183	0.64	-1.591	55.117
Monks-Neil Park	4.15	-0.181	0.14	-2.187	53.069
Highdown Gardens	4.14	-0.181	0.12	-0.441	50.824

Shobnall Leisure Com...	4.13	-0.179	0.29	-1.654	52.811
South Park	4.13	-0.173	0.23	-1.229	51.751
unnamed	4.12	-0.171	0.35	-2.955	51.157
Warley Park	4.11	-0.170	0.25	-1.981	52.473
Priory Park	4.11	-0.170	0.18	0.707	51.553
unnamed	4.10	-0.170	0.11	-1.427	51.601
Knightshayes Park	4.09	-0.170	0.71	-3.479	50.921
Walton Hall Park	4.09	-0.168	0.54	-2.952	53.448
unnamed	4.08	-0.168	0.10	-0.276	52.595
Laithwaite Park	4.07	-0.166	0.14	-2.658	53.541
Central Park	4.07	-0.163	0.68	-4.147	50.386
unnamed	4.06	-0.163	0.13	-2.916	50.923
Fox Hollies Park	4.05	-0.160	0.17	-1.821	52.437
Amesbury Park	4.05	-0.160	0.43	-1.789	51.174
One Leisure St Ives ...	4.04	-0.156	0.16	-0.092	52.337
unnamed	4.03	-0.156	0.13	-1.729	53.882
Mandale Park	4.03	-0.157	0.19	-2.168	53.609
unnamed	4.02	-0.157	0.33	-2.106	52.985
Fairway Sports Compl...	4.01	-0.155	0.11	-1.166	50.657
Morden Hall Park	4.01	-0.155	0.40	-0.185	51.403
Langold Country Park	4.00	-0.155	0.56	-1.127	53.371
Whittleford Park	4.00	-0.155	0.50	-1.503	52.526
Chesham Moor	3.99	-0.154	0.14	-0.599	51.693
Memorial Park	3.98	-0.154	0.14	-2.063	52.587
Philips Park	3.98	-0.154	0.12	-2.194	53.488
Audley Park	3.97	-0.152	0.86	0.227	52.021
High Tor Recreation ...	3.97	-0.150	0.19	-1.555	53.129
unnamed	3.96	-0.150	0.15	-2.763	51.473
Wyken Croft Nature P...	3.95	-0.150	0.25	-1.454	52.425
Scrivelsby Park	3.95	-0.149	1.09	-0.097	53.176
unnamed	3.94	-0.146	0.12	-0.993	51.744
Victoria Park	3.94	-0.145	0.21	-2.586	51.440
Grin Low And Buxton ...	3.93	-0.145	0.42	-1.925	53.247
Decoy Country Park	3.92	-0.145	0.54	-3.603	50.518
unnamed	3.92	-0.145	0.17	-0.452	53.997
Furzton Lake	3.91	-0.144	0.38	-0.763	52.014
Tynedale Park	3.91	-0.144	0.13	-2.011	54.966
unnamed	3.90	-0.143	0.11	-3.015	53.326
Ampthill Park	3.90	-0.143	0.63	-0.502	52.035
Woolten Woods And Ca...	3.89	-0.143	0.21	-2.868	53.369
Broome Heath	3.89	-0.143	0.29	1.455	52.470
Manor Park	3.88	-0.141	0.15	-3.235	50.726
Waldershare Park	3.87	-0.142	0.25	1.277	51.188
The Edge	3.87	-0.142	0.17	-0.746	51.095
Haden Hill Park	3.86	-0.139	0.37	-2.063	52.463
Cusworth Park	3.86	-0.139	0.22	-1.175	53.528
Marl Pits Sports Com...	3.85	-0.139	0.17	-2.269	53.705
Bowness Gardens	3.85	-0.138	0.14	-2.606	51.497
Astley Park	3.84	-0.138	0.45	-2.642	53.658
unnamed	3.84	-0.136	0.14	-1.895	50.747

unnamed	3.83	-0.133	0.14	-1.678	54.986
Church Green	3.83	-0.132	0.15	1.041	52.480
Clee Fields	3.82	-0.132	0.17	-0.057	53.555
King Edward VII Park	3.82	-0.130	0.10	-0.294	51.557
Birchall Playing Fie...	3.81	-0.129	0.12	-2.024	53.093
unnamed	3.81	-0.127	0.15	0.352	51.419
Knights Grange Sport...	3.80	-0.127	0.77	-2.544	53.200
Saltburn Valley	3.80	-0.127	0.23	-0.970	54.579
Sunnyhill Park	3.79	-0.126	0.22	-0.228	51.596
unnamed	3.79	-0.126	0.34	-2.377	53.446
Mote Park	3.78	-0.126	1.75	0.547	51.263
New Park	3.78	-0.126	0.18	-1.666	53.568
Upton Meadow	3.77	-0.126	0.16	-3.104	53.380
unnamed	3.77	-0.125	0.11	-0.269	51.393
Sullington Warren	3.76	-0.125	0.26	-0.439	50.919
Calthorpe Park	3.76	-0.125	0.14	-0.850	51.277
Butterley Park	3.75	-0.125	0.94	-1.380	53.054
Kings' Park	3.75	-0.125	0.10	-0.946	53.321
Montreal Park	3.75	-0.124	0.18	0.166	51.277
Parsloes Park	3.74	-0.124	0.60	0.135	51.544
Barton's Point	3.74	-0.123	0.31	0.790	51.436
Yeovil Recreation Ce...	3.73	-0.122	0.17	-2.638	50.953
Hall Park	3.73	-0.123	0.14	-0.598	52.285
Leegomery Pools	3.72	-0.122	0.11	-2.496	52.708
The Park	3.72	-0.122	1.23	-0.925	54.121
unnamed	3.71	-0.121	0.12	-1.450	54.951
Stanmore Country Par...	3.71	-0.121	0.16	-2.378	52.531
Lyme and Wood Pits C...	3.70	-0.120	0.99	-2.653	53.462
Heacham Park	3.70	-0.120	0.18	0.497	52.914
Paddington Recreatio...	3.70	-0.120	0.11	-0.189	51.530
Beacon Park	3.69	-0.120	0.29	-1.837	52.684
unnamed	3.69	-0.120	0.12	-1.839	52.481
Queen's Park	3.68	-0.120	0.20	-2.443	53.579
Seaton Valley Countr...	3.68	-0.120	0.58	-4.387	50.375
Chennell Park	3.67	-0.120	0.20	0.676	51.073
Southrepps Common	3.67	-0.120	0.11	1.361	52.865
Test Park	3.66	-0.119	0.14	-1.468	50.928
Jubilee Meadows	3.66	-0.119	0.16	-1.681	54.706
Tiptree Heath	3.66	-0.119	0.21	0.731	51.799
Plumstead Common	3.65	-0.119	0.38	0.099	51.481
Marston Park	3.65	-0.119	0.93	-2.341	51.202
unnamed	3.64	-0.119	0.13	-0.164	50.946
Mill Green Nature Pa...	3.64	-0.118	0.28	-2.015	52.689
Knighton Park	3.63	-0.118	0.34	-1.106	52.599
Sluice Common	3.63	-0.115	0.12	0.367	52.583
The Lawn	3.63	-0.114	0.36	-1.766	51.551
American Garden	3.62	-0.114	0.25	-0.769	51.337
Streatlam Park	3.62	-0.112	0.35	-1.863	54.570
unnamed	3.61	-0.111	0.15	-0.368	53.776
The Park	3.61	-0.111	0.13	-0.756	53.930

Sports Centre and Me...	3.61	-0.111	0.11	-0.472	52.656
unnamed	3.60	-0.110	0.15	-1.290	53.599
Howe Bridge Leisure ...	3.60	-0.109	0.18	-2.502	53.514
unnamed	3.59	-0.109	0.14	-0.034	52.046
Jubilee Park	3.59	-0.109	0.11	-0.994	53.582
Wincombe Park	3.59	-0.109	0.18	-2.171	51.016
Daisy Farm Park	3.58	-0.108	0.11	-1.873	52.405
Oare Gunpowder Works...	3.58	-0.107	0.16	0.875	51.325
unnamed	3.57	-0.107	0.10	-0.161	52.674
unnamed	3.57	-0.107	0.10	-1.669	50.747
Chafford Gorges Natu...	3.57	-0.107	0.26	0.302	51.488
Caythorpe Court	3.56	-0.106	0.20	-0.571	53.022
unnamed	3.56	-0.106	0.88	-2.218	51.733
American Gardens	3.56	-0.105	0.13	-4.763	50.503
Allesley Park Golf C...	3.55	-0.105	0.12	-1.555	52.419
Lammas Lands	3.55	-0.105	0.30	-0.601	51.189
unnamed	3.54	-0.104	0.11	-3.051	53.564
unnamed	3.54	-0.104	0.13	-0.332	51.290
Brockhill Country Pa...	3.54	-0.104	0.22	1.067	51.080
West Ham Park	3.53	-0.103	0.26	0.020	51.539
Wassand Park	3.53	-0.103	0.42	-0.218	53.898
Humberstone Park	3.53	-0.103	0.12	-1.083	52.639
Millbrook Park Mille...	3.52	-0.103	0.15	-2.891	53.487
Berrington Park	3.52	-0.103	1.10	-2.719	52.265
Lily Hill Park	3.52	-0.103	0.24	-0.724	51.414
Naworth Parks	3.51	-0.103	2.98	-2.684	54.957
unnamed	3.51	-0.103	0.11	-0.200	53.615
Bennett's Park	3.50	-0.103	0.24	0.631	51.964
Little Stoke Park	3.50	-0.103	0.12	-2.560	51.528
Longdales Park	3.50	-0.103	0.13	-0.478	53.260
Southbury Leisure Ce...	3.49	-0.103	0.38	-0.062	51.655
Hatch Grange	3.49	-0.103	0.15	-1.336	50.930
Elmers Green Common	3.49	-0.102	0.22	-2.762	53.552
Kilburn Park	3.48	-0.102	0.22	-1.240	54.209
Murton Recreation Gr...	3.48	-0.102	0.13	-1.389	54.812
Norbury Park	3.48	-0.102	0.11	-0.117	51.413
Fairbank Plantation	3.47	-0.102	0.11	-2.599	54.207
Sandbach United Foot...	3.47	-0.101	0.10	-2.382	53.138
Shobrooke Park	3.47	-0.100	0.75	-3.626	50.799
Tadley Common	3.46	-0.100	0.36	-1.127	51.356
Riverside Garden Par...	3.46	-0.100	0.11	-0.167	51.163
unnamed	3.45	-0.100	0.11	-2.734	53.796
unnamed	3.45	-0.099	0.10	-1.999	51.427
Mary Stevens Park	3.45	-0.099	0.12	-2.149	52.448
Harvey Hadden Sports...	3.44	-0.098	0.17	-1.218	52.967
unnamed	3.44	-0.098	0.11	-2.820	54.064
Colemere	3.44	-0.098	0.49	-2.842	52.893
Highmoor Park	3.43	-0.098	0.34	-3.141	54.818
Lido Park Droitwich	3.43	-0.098	0.15	-2.143	52.263
unnamed	3.43	-0.098	0.13	0.014	50.867

unnamed	3.42	-0.098	0.22	-2.296	53.497
Holywells Park	3.42	-0.098	0.18	1.174	52.047
Odd Down Sports Grou...	3.42	-0.097	0.17	-2.373	51.361
St Helen's Wood	3.41	-0.097	0.40	0.580	50.878
Anstey Park	3.41	-0.097	0.19	-0.962	51.160
unnamed	3.41	-0.097	0.12	-0.407	51.561
Langdon Hills Countr...	3.40	-0.097	1.71	0.436	51.545
Bexhill Down	3.40	-0.096	0.16	0.464	50.847