Understanding South London's hedgehog populations with London Hogwatch 2020

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Key findings

- The outlook for South London's hedgehog populations looks better than originally thought from previous London HogWatch surveys.
- The known populations in Barnes Common and Barnes Wetlands seem to be connected and can disperse into surrounding areas which is encouraging for the long term survival of this population.
- Barnes Common/Putney Lower had a much lower hedgehog trap rate than in previous years surveys which is potentially worrying as it could indicate a population decline.
- Badgers are affecting hedgehog distribution in SW London and gardens are acting as important refuges for hedgehogs in this area.
- Twickenham could be a potential hotspot for hedgehogs in SW London as private garden surveys showed a wide distribution in this area.
- Beddington park had a lower hedgehog trap rate than the surrounding gardens possibly highlighting a connectivity issue as the park is surrounded by busy roads. This area also had a relatively low trap rate indicating this may be a small and vulnerable population in need of targeted conservation efforts.
- Gardens play an important role as habitat for South London's hedgehogs. Both small and large green spaces need to be surveyed in the future to gain an accurate picture of hedgehog distribution and abundance.

Introduction

Hedgehogs have recently been classified as vulnerable to extinction in the UK as their numbers are estimated to have declined by 46% in the last 13 years[1]. The causes of this decline are complicated, as many factors are likely to be interacting to produce this effect. These factors include habitat loss, use of pesticides and other agricultural chemicals, road traffic and an increasing badger population[2-4].

London HogWatch is aiming to help halt hedgehog population decline in London, working alongside other nature conservation organisations such as the Peoples Trust for Endangered Species. A key problem with conservation efforts so far is a lack of knowledge about the distribution and size of existing populations within London. Having this information would allow for efforts to be targeted and more successful. Currently, data is predominately gathered from citizen science surveys, such as the

PTES Big Hedgehog Map[5]. Whilst this method can provide useful data on hedgehog presence, little can be inferred about their absence and relative abundance. London HogWatch uses a different approach, that of systematic camera trapping, to provide data on both presence and absence. In addition, the use of camera traps means data on other species that may impact hedgehogs is also collected, such as red foxes and badgers, among other species.

London HogWatch have previously surveyed 11 sites in South London (Appendix 1) and only four of these had hedgehog sightings. Out of these, two only had one contact (Peckham Rye Common and Bushy Park) and the remaining two were found to have a resident population (Barnes Common and Barnes Wetland Centre (WWT)). All the parks surveyed in SW London that did not have hedgehog sightings had badger sightings and evidence shows that hedgehogs are less likely to inhabit areas where badgers are present[6]. This means that this part of London is an interesting area to study the interactions between these two species. Furthermore, all previous survey sites in South London have been large green spaces. However, smaller residential green spaces can play an important role as a habitat for hedgehogs due to absence of predators and increased food availability from supplementary feeding[7]. In 2020 a mixture of habitats were surveyed, including gardens and allotments, to gain a clearer understanding of hedgehog populations in the South and understand the relative importance of different habitat types in this region.

Barnes was first identified as a potential hedgehog hotspot for the South West when the 2018 Hogwatch survey results revealed that nearly a quarter of the cameras in Barnes Common/Putney Lower had hedgehog contacts. The survey area was then expanded in 2019 to cover neighbouring green spaces. However, only two of the five green spaces had hedgehog sightings (Barnes Common and Barnes Wetland Centre). Due to the size of these sites, there was concern as to whether they were big enough to support the populations into the future. Furthermore, due to the distance between the sites it was not known whether these populations were connected. The 2020 surveys build on the surveys done in 2018 and 2019 to gain a better understanding of the hedgehog populations in this area and see if they can disperse into the surrounding green spaces. Exploratory garden surveys were also completed across SW London to gauge how far this population extends.

Due to the limited records of hedgehogs in South London from previous surveys it was important to survey new areas to gain a better understanding of their distribution across this part of the city. Therefore, Beddington Park and surrounding gardens in the London Borough of Sutton were also surveyed this year.

Survey Locations

In total 11 surveys were carried out in South London between April – October 2020. These were of varying sizes, habitats and locations (Table 1). They were grouped into three broad survey areas.

- **South West gardens –** Between April and June 40 cameras were delivered to houses in South West London. The three targeted areas were Sheen, Twickenham and Teddington. Twickenham had the majority of the survey effort with 24 gardens surveyed compared with 12 in Teddington and five in Sheen. Participants were enlisted through varies avenues including local environmental groups, neighbourhood groups and personal connections. In addition, a group of three large communal gardens were surveyed in Twickenham in May.

- **Barnes/Roehampton -** The Barnes and Roehampton area was the main area surveyed with seven of the surveys (Figure 2). These were done in collaboration with Friends of Barnes Common, Barnes Hedgehogs and SW15 Hedgehogs.

- **Sutton -** Beddington Park and some surrounding gardens and allotments were surveyed in June in collaboration with Sutton Council.

Table 1: Overview of all London HogWatch's South London surveys in 2020

Survey	Region	Cameras	Site type	Start date	Hedgehog
South West gardens	South West gardens	40	Gardens	24/04/2020	Yes
Twickenham communal garden	South West gardens	25	Communal gardens	22/05/2020	No
North Barnes	Barnes / Roehampton	20	Housing estate including gardens	22/07/2020	Yes
Barnes Elms and fishing ponds	Barnes / Roehampton	12	Private fishing area and public woodland	05/07/2020	Yes
Leg O Mutton pond	Barnes / Roehampton	15	Nature reserve	31/08/2020	No
Roehampton University	Barnes / Roehampton	15	University campus	29/07/2020	No
Roehampton gardens	Barnes / Roehampton	10	Gardens and allotments	28/07/2020	Yes
Barnes Wetlands	Barnes / Roehampton	30	Nature reserve	30/09/2020	Yes
Barnes Common and Putney Lower	Barnes / Roehampton	30	Park	05/07/2020	Yes
Beddington Park	Sutton	32	Park	18/06/2020	Yes
Sutton gardens	Sutton	13	Gardens and allotments	18/06/2020	Yes

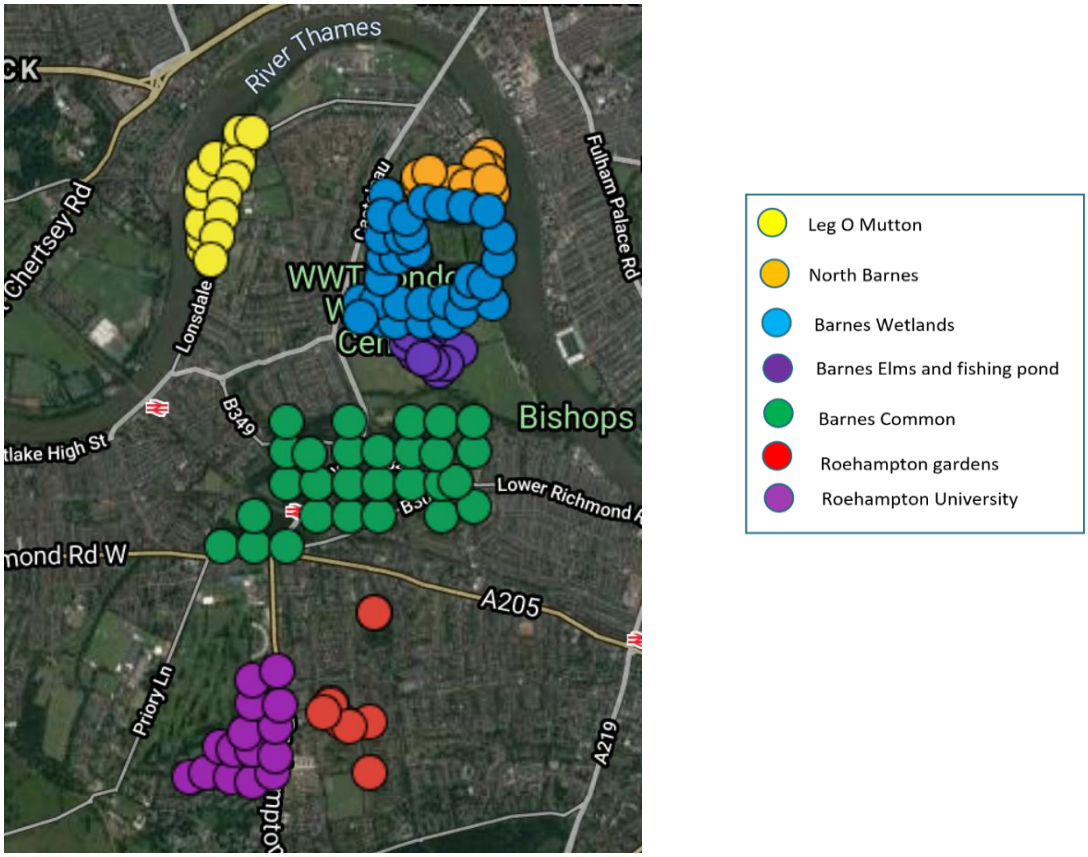

Figure 2: Map of survey sites in Barnes and Roehampton in 2020

Method

All surveys in larger greenspaces followed our established survey method. The entirety of each greenspace was covered, using Browning Strike Force Pro camera traps. The traps were set to trigger and take a photo every second if an animal entered the detection zone of the camera. Use of infrared flash allowed the cameras to be active at night as well as day. To ensure even coverage of the greenspace and to follow REM[8] protocol, cameras were placed as close as possible to a predetermined grid pattern. Ideal site coordinates generated by computer were uploaded to Google's MyMaps, allowing the use of smartphone GPS to locate the camera points. The garden/allotment cameras were given out to willing volunteers in the area. Due to COVID-19 restrictions these were put up by the volunteers themselves using emailed instructions.

Only photos taken between the hours of 6pm and 8am were processed for the Barnes and Roehampton surveys, and between 9pm and 5am for the Sutton surveys as the species of interest (hedgehogs, badgers and foxes) are predominantly nocturnal. This restricted tagging interval also has the benefit of avoiding much of the human activity the cameras detect. For the SW garden surveys all pictures were processed. Once tagged, the data was used to calculate trapping rates (number of sightings/the nights the camera was active) and distribution maps were generated for each site and species.

Results and discussion

Barnes and Roehampton

Hedgehogs were found at five of the seven survey sites (Table 2). It is encouraging to see that the known populations in Barnes Wetlands and Barnes Common can disperse into surrounding areas and that the two populations appear to be connected (Figure 3). Figure 3 shows that hedgehogs are fairly widely dispersed in this area, more so than was indicative of the 2019 survey results. This may partly be due to targeting smaller green spaces this year and shows the importance of these smaller habitats for the area's hedgehog populations.

It is especially encouraging to see such a high trap rate in Barnes Elms and fishing ponds where there were 88 contacts on only 12 cameras (Table 2). One possible reason for this is it is a low disturbance area. Part of the area is a private fishing pond which is gated, and the other part is a small woodland with few visitors. One further reason for such high trap rate could be due to the fact that it contains a water source and the survey was done during a very warm period in August.

Trap rate in North Barnes was 0.046 and hedgehogs were present at 35% of the sites (Table 2). The North Barnes site is a housing estate just north of Barnes Wetlands (Figure 2). It has two wildlife corridors that connect it to the Wetlands which hedgehogs were recorded in. It is positive to have evidence that these corridors are effective. Hedgehogs were also found in the communal gardens to the east by the river (Figure 3), the green areas running along the river may also be a good dispersal route for them. Future surveys in this area could see how far north this population extends and how widely they are distributed in this area. For example, north west of the surveyed area is Barnes Elms Allotments which would be a particularly good area to survey in the future.

Table 2: Results from the seven Barnes and Roehampton surveys. Trapping rate is the total number of sightings/ survey effort (total nights cameras were active).

Species	Number of Sightings (6pm – 8am)	Number of Sites Present (%)	Overall Trapping Rate
Barnes Common/Putney Lower Sites: 27 (3 cams failed) Effort: 562 (camera trap nights)			
Hedgehog	3	3 (11%)	0.005
Fox	449	23 (85%)	2.12
Badger	13	3 (11%)	0.021
Barnes Elms and fishing ponds Sites: 12 Effort: 216 (camera trap nights)			
Hedgehog	88	7 (58%)	0.41
Fox	307	12 (100%)	1.42
Badger	0	0 (0%)	0
Barnes Wetlands (WWT) Sites: 29 (1 cam failed) Effort: 438 (camera trap nights)			
Hedgehog	12	8 (28%)	0.027
Fox	721	26 (90%)	1.75
Badger	0	0 (0%)	0
Leg O Mutton Sites: 15 Effort: 392 (camera trap nights)			

Hedgehog	0	0 (0%)	0
Fox	371	14 (93%)	0.93
Badger	1	1 (7%)	0.0026
North Barnes Sites: 20 Effort: 270 (camera trap nights)			
Hedgehog	13	7 (35%)	0.046
Fox	1041	20 (100%)	3.64
Badger	0	0 (0%)	0
Roehampton University Sites: 15 Effort: 209 (camera trap nights)			
Hedgehog	0	0 (0%)	0
Fox	336	15 (100%)	1.6
Badger	19	9 (60%)	0.09
Roehampton gardens Sites: 7 (4 cams failed/excluded) Effort: 98 (camera trap nights)			
Hedgehog	161	7 (100%)	1.69
Fox	698	6 (86%)	7.15
Badger	0	0 (0%)	0

The trap rate for both Barnes Common/Putney Lower and Wetlands was much lower than in previous years. The difference in trap rate for the wetlands was 0.15 in 2019 and 0.027 in 2020. However, this is probably due to the survey from 2020 being completed in October, due to COVID restrictions, compared to July in 2019. For Barnes Common/Putney Lower the trap rate was 0.32 for 2018 and 0.02 for 2019. However, this year it was 0.005 and there were sightings at under half the camera sites than in the previous years (Appendix 1). The surveys were carried out at a similar time of year so this is potentially very concerning. It is important that these areas are surveyed in the future to assess whether this does indicate a decline in population.

As expected, foxes were well distributed in all the survey areas with only a few cameras not having fox contacts (Figure 4). Some had exceptionally high trapping rates, for example an allotment in Roehampton had a trap rate of 39.35 but this was due to the camera being placed near a fox den.

Figure 3: ***Barnes and Roehampton.*** *Left: hedgehog distribution. Red indicates presence and white absence. Trapping rates ranged from 0 to 6.93. but capped at 5 to aid clearer visualisation. Right: badger distribution. Blue indicates presence and white absence. Trapping rates ranged from 0 to 0.48. Larger circles indicate higher trapping rates.*

*Figure 4: **Barnes and Roehampton**. Fox distribution. Orange indicates presence and white absence. Larger circles indicate higher trapping rates. Trapping rates ranged from 0 to 39.35 but trapping rates capped at 5 to aid clearer visualisation.*

This area shows an interesting pattern between hedgehogs and badgers. Figure 5 shows the distributions of hedgehog and badger sightings during surveys between 2018-2020 and that there is no overlap between the two species. As badgers are a predator of hedgehogs, they have been shown to affect hedgehog movements and are negatively correlated to their distribution[6,9,10]. It appears the railway tracks in the south end of Barnes Common separates the species in Barnes. North of the railway line hedgehogs are resident in the large green spaces. However, South of the railway line only badgers are present in the large green spaces. There has only been one badger camera contact north of the railway line from 2018 – 2020 suggesting that this is a transient individual, and the railway is acting as a barrier to badgers colonising the North Barnes green spaces.

Further south in Roehampton the two species are split between residential areas to the east where hedgehogs are present, and to the larger green spaces west, including the Roehampton University grounds, where badgers are abundant. It appears badgers in these areas are excluding hedgehogs in open green spaces, but the residential areas are providing an important refuge for hedgehogs. It has been shown that habitat selection for hedgehogs differs in the presence of badgers, when badgers are present hedgehogs are found closer to buildings than when they badgers are absent[7]. Our study of badgers in Home Park and other parks suggest that badgers are sensitive to human disturbance[7,9,11]. It may be that the greater level of disturbance in residential areas in Roehampton is stopping badgers from moving further east. The high hedgehog trap rate in Roehampton gardens and allotments (Table 2) suggests the importance of this habitat type in the area. Understanding the

distribution patterns of the two species can help effective and targeted conservation efforts, thus showing the importance of systematic camera trapping surveys as they gain information on the distribution of predator species. Further surveys in this area are recommended to gain a clearer understanding of this relationship especially expanding outwards to see how far these populations extend.

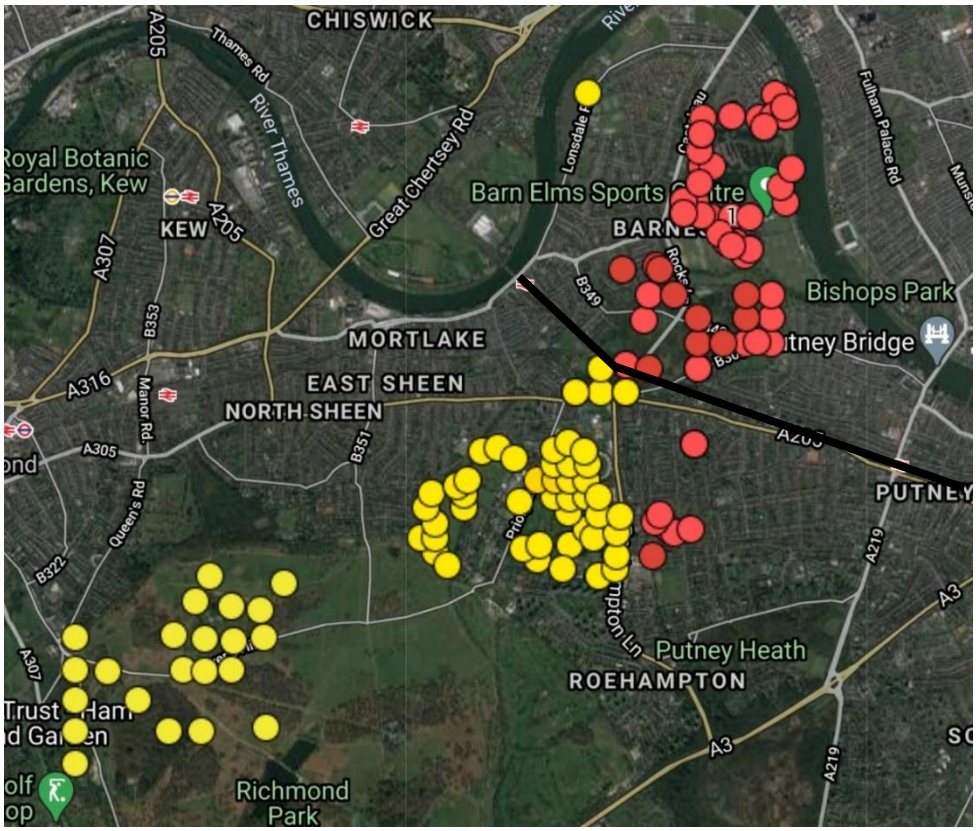

Figure 5. The summary findings of surveys (between 2018-2020) in southwest London only showing sites where hedgehogs (red) and badgers (yellow) were found. No site overlap between the two species. There is a division at the southern end of Barnes Common at a railway crossing point which might be keeping the badgers back (black line). To the east in Roehampton hedgehogs seem better equipped to live in dense residential areas.

South West garden surveys

In total eight private gardens had hedgehog contacts, seven of which were in Twickenham, one in Teddington and none in Sheen (Figure 6). Unfortunately, only 30 cameras were analysed as 10 were omitted, mostly due to poor camera placement. Overall almost a quarter of the private gardens had hedgehog contacts. The average trap rate for the private gardens was 0.20. This trap rate excluded two cameras which were placed in front of food bowls. Unfortunately, no hedgehogs were found in the communal gardens. Foxes were widely distributed for both surveys being present at every camera site in the communal gardens and trap rate for this survey was also higher than for the private gardens (Table 3).

Table 3: Results from the South West garden surveys. Trapping rate is the total number of sightings/ survey effort (total nights cameras were active).

Species	Number of Sightings	Number of Sites Present (%)	Overall Trapping Rate
SW private gardens Sites: 30 (10 excluded) Effort: 886 (camera trap nights)			
Hedgehog	81*	9 (30%)	0.20*
Fox	444*	27 (90%)	0.92*
Badger	0	0 (0%)	0
Twickenham communal gardens Sites: 25 Effort: 344 (camera trap nights)			
Hedgehog	0	0 (0%)	0
Fox	490	25 (100%)	1.42
Badger	0	0 (0%)	0

* Excluding the 2 sites where camera was in front of feeding bowl

*Figure 6: **South West garden surveys**. Hedgehog distribution. Red indicates presence and white absence. Cameras that were omitted are not shown.*

*Figure 7: **South West garden surveys**. Fox distribution. Orange indicates presence and white absence. Larger circles indicate higher trapping rates. Trapping rates ranged from 0 to 9 but trapping rates were capped at 5 to aid clearer visualisation.*

*Figure 8: **Twickenham garden surveys.** Hedgehog distribution. Red indicates presence and white absence. Larger circles indicate higher trapping rates. Trapping rates ranged from 0 to 8.5. One point in the South West corner was capped at 5 to aid clearer visualisation.*

Our results suggests that Twickenham has a fairly wide hedgehog distribution and some gardens had high trapping rates (Figure 8). The highest was 8.5 but this was one of two gardens where food was left out. When excluding these two gardens the highest trap rate was 4.5 which is still very high. Nearly 40% of private gardens in Twickenham had hedgehogs present. It was surprising that the communal gardens in Twickenham had no hedgehog sightings as there were sightings from other cameras very close by (Figure 8) and it was a large area and good habitat. However, these communal gardens and the hedgehog sightings were separated by a large A road (A316) and so it is likely that this acts as a barrier to their dispersal. Twickenham would be a good area to conduct future surveys and in addition to gardens could target larger green spaces in the area such as Moormead and Marble Hill park.

Teddington had one garden with a hedgehog contact out of the 10 with usable data. This site was very close to six other cameras locations (Figure 6). This could suggest that garden connectivity around that area is poor and suggests there is a small population in this area. Out of the five cameras given out in Sheen only two had useable data. Although neither of these had any hedgehog contacts, we are unable to infer absence in this area from such a small sample.

Sutton

In Beddington Park only four sightings of hedgehogs were recorded at three cameras (13% of total camera sites), and the trap rate was 0.006 (Table 4). This suggests that there is not a resident population in the park and these were transient individuals. Unfortunately, six cameras were stolen from the park and there may have been more hedgehog sightings on these. However, without these cameras and the two which were excluded (due to poor placement) effort was still high with 24 cameras and 413 camera trap nights.

The gardens and allotments had a higher trap rate of 0.022 and hedgehogs were present at 46% of camera sites (Table 4). Figure 9 illustrates that there is high variation in trap rate for hedgehogs, with one outlier. Out of the nine cameras where hedgehogs were present six had one detection; two had two detections; and one had 73. The camera with 73 detections was located next to a feeder which attracted a regular visitor. Therefore, this camera was excluded in the trap rate calculation. Including this camera for the garden surveys the trap rate was ten times larger at 0.21.

Table 4: Results from the London Borough of Sutton surveys. Trapping rate is the total number of sightings/ survey effort (total nights cameras were active).

Species	**Number of Sightings (9pm-5am)**	**Number of Sites Present (%)**	**Overall Trapping Rate**
Beddington Park Sites: 24 (6 cams stolen, 2 excluded) Effort: 413 (camera trap nights)			
Hedgehog	4	3 (13%)	0.006
Fox	1568	23 (100%)	4.17
Badger	0	0 (0%)	0
Gardens and allotments Sites: 13 Effort: 291 (camera trap nights)			
Hedgehog	6*	6 (46%)	0.022*
Fox	608	12 (92%)	1.95
Badger	0	0 (0%)	0

**Excluding a garden where camera was placed in front of feeding bowl.*

One potential reason for hedgehogs not using the parks as much as the gardens is connectivity. Hedgehogs have a relatively poor dispersal ability, preventing some of them from accessing areas that would otherwise be suitable. There are two busy A roads to the east and south of Beddington Park which could be a barrier to their dispersal. The size of the park may also be an issue, as research suggests a space of around 90 ha[12] is needed to support a minimum viable population of hedgehogs. Beddington Park is only 59 ha which again highlights the issue of connectivity. However, north of the park there is a large green/gravel area, formerly a landfill site, that is now being restored into a major nature reserve. This extends all the way to Micham Common which would make it a large connected area. This would be an important site for future surveys to better understand the hedgehog distribution in the area. Improving hedgehog access from surrounding gardens to the park may be needed to help hedgehogs colonise the area.

Although the trap rate outside the park was higher than within it is still not very high compared to some sites in London, with most cameras only having one contact. This suggests the population may be small and widely dispersed. Conditions may be improved by encouraging garden owners to create hedgehog holes to increase access and improve habitat to encourage a wider range of invertebrates for the hedgehogs to feed on. With the results of this study, Sutton Council are creating a hedgehog action group, focusing on habitat creation and education.

Figure 9: ***Beddington Park and surrounding gardens and allotments****. Hedgehog distribution. Red indicates presence and white absence. Trapping rates ranged from 0 to 2.43. Larger circles indicate higher trapping rates.*

Figure 10: ***Beddington Park and surrounding gardens and allotments****. Fox distribution. Orange indicates presence and white absence. Trapping rates ranged from 0 to 9.31. Larger circles indicate higher trapping rates.*

Foxes were well distributed across the area, being present at all but one garden camera site (Figure 10). Fox activity was very high, especially in Beddington Park, which had an overall trap rate of 4.17 (Table 4). This is among the highest values we have found in London. The high rate is likely to reflect a high fox density in the park as it is surrounded by gardens providing food sources and den sites. This, combined with food provided by visitors to the park, may lead to high fox densities. However, foxes are abundant throughout London and there is no evidence that they have a major impact on hedgehog populations although there is a high degree of overlap in the diets of these two species so it is likely that they compete for food.

Limitations

Due to COVID 19, our operations were altered this year. At the start of the season we were unable to survey large green areas. Instead, we distributed cameras to people's doorsteps for them to set up themselves in their garden with emailed instructions and diagrams. In normal circumstances we would have set up these cameras ourselves to ensure placement was correct and completed a habitat assessment of the gardens to gauge their suitability. Many cameras were not set up well - in some cases the camera was completely obscured by vegetation or set up so high that the ground was not visible. These cameras had to be excluded, and in total an average of about one quarter of garden cameras could not be included in our surveys. In other cases, the data was usable but many cameras were placed upside down or not placed well so that the detection zones were small. For

future garden surveys we hope to set them up ourselves and in instances where this is not possible we will update our instructions to address some of these common problems.

The garden surveys are not a truly representative sample as people were in many cases recruited by local environmental groups so it likely that they were interested in wildlife and are likely to have gardens where they have already taken measures to make them hedgehog friendly. To counter this, attempts were made to include a variety of gardens by recruiting in wide variety of ways, for example putting out calls on the community COVID support groups. However, for these types of surveys it is difficult to get a true representative sample and we wanted to maximise the amount of gardens surveyed by allowing anyone interested to take part. Furthermore, we saw these surveys as not only a way to get data but also as a public engagement activity. Our future garden surveys will build on the experiences and lessons that we learnt in these surveys. It is also hoped that in the Spring-Summer of 2021, we will be allowed greater flexibility so we can get access to private gardens and to put the cameras out ourselves.

The Beddington Park survey was undertaken by staff from Sutton council. Due to COVID they were trained though YouTube videos. Some parts of the park had very long grass making placement difficult as the camera lens was obscured. Some cameras were not placed well and some were interfered with by the public, for example, people pointing them to the sky or the ground. It was also very unfortunate that six cameras were stolen. Due to all of these reasons, we lost the data from a number of camera locations.

Due to the situation in 2020, the Barnes Wetlands survey was not able to happen until October. Therefore, there must be caution in comparing it with the 2019 survey which was done in July as hedgehog activity will be lower in October. We wish to undertake this survey again in summer 2021 to obtain a more comparable data set.

The inability to have volunteers to assist with surveys reduced our resources compared to previous years, but with the help of Friends of Barnes Common, Barnes hedgehogs, SW15 hedgehogs and Sutton council we managed to undertake a large amount of surveys in 2020. Another limitation associated with this method is the large amount of data it generates, and how time consuming it is to process. Ultimately, despite the limitations of COVID we managed to get a large amount of data and insight into South London's hedgehog distributions.

Conclusion

The outlook for hedgehogs in South London is looking better than was originally believed from previous surveys as there were many more hedgehog contacts in the 2020 sites. Therefore, we are gaining a better understanding of their distribution in the South and it is important that in the future we target completely new areas to aid this.

In the majority of London we have seen roads affecting distribution of hedgehogs and from 2020 surveys we have also observed this in the South. However, in the South West badgers also appear to play a role in this. In future we wish to expand surveys in the South West to better map distribution of both species to aid more effective conservation. For example, our South West garden surveys have identified that Twickenham has a wide distribution of hedgehogs in the residential areas. However, we do not know if the badger population extends this far and whether they are inhabiting the larger green spaces in this area. This would be an interesting area to analyse in 2021.

These surveys have also highlighted the importance of gardens for London's hedgehog populations. Gardens seem to be an important refuge for hedgehogs in areas where badgers have colonised the parks and even in areas where this is not the case, such as Sutton. Therefore, it is important that in the future we survey both parks and gardens to gain a clear picture of how hedgehogs are faring in London. In 2021 we will target the residential areas from Roehampton to Barnes as it would be good to know if there is a continuous population in this area.

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Appendix

Appendix 1: Summary of all London HogWatch's previous South London surveys.

Park	Contact events	Camera Sites (total)	Overall Trapping Rate
Barnes Common/Putney Lower (2018)	19	7 (24)	0.032
Barnes Common/Putney Lower (2019)	16	7 (26)	0.02
Bank of England Sports Club (2019)	0	0 (0)	0
Bushy Park (2017)	1	1 (7)	0.003
Dulwich Park (2019)	0	0 (0)	0
Home Park (2018)	0	0 (0)	0
Peckham Rye Park and Common (2019)	1	1 (4)	0.002
Palewell Common (2019)	0	0 (0)	0
Richmond Park (2018)	0	0 (0)	0
Roehampton Golf Club (2019)	0	0 (0)	0
Russia Dock Woodland (2019)	0	0 (0)	0
WWT London Wetland Centre (2019)	62	13 (45)	0.15