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Land off Oakhurst Rise, Charlton Kings, GL52 6NR
Badger Survey (Revision 1)

November 2016

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Notice to readers:

The results of the survey and assessment work undertaken by All Ecology are representative at the time of surveying.

Every endeavour has been made to identify the presence of protected species on site, where this falls within the agreed scope of works.

The flora and fauna detailed within this report are those noted during the field survey and from anecdotal evidence. It should not be viewed as a complete list of flora and fauna species that may frequent or exist on site at other times of the year.

All Ecology cannot accept responsibility for data collected from third parties.

Reference to sections or particular paragraphs of this document taken out of context may lead to misrepresentation.

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1.0 Introduction

Background

- 1.1 All Ecology was commissioned to undertake a Badger survey in relation to a proposed development at a site known as Land off Oakhurst Rise, Charlton Kings, GL52 6NR.
- 1.2 The site is approximately 4 ha in size and is composed of two fields of grassland, a larger field at 3 ha in size, and a smaller field 1ha in size. These are separated by a mature hedge and trees; a line of trees also extends into the larger field from the north boundary. A small number of mature and semi-mature standard trees are also present on site. The site is bound by a mix of hedges and trees, garden walls, and fences. It is surrounded by residential housing on all aspects except to the south where St Edwards School is situated.
- 1.3 A previous Ecological Appraisal of the site carried out by All Ecology in September 2016 identified Badger activity on site in the form of a number of active and inactive holes within the hedges and below the trees on site. It was clear that any development of the site is likely to have a significant impact on the Badgers and a full detailed survey was therefore carried out to determine the following.
 - presence/absence of new setts on site
 - status of known setts
 - the level of Badger activity associated with the site and its surroundings
 - impacts of the scheme and development constraints
 - recommendations for mitigation to ensure legal compliance
 - whether a licence is required to permit the works
- 1.4 **This revision of the report includes a revised proposed site plan.**

Site Location



2.0 Legislation and Licensing

Legislation

- 2.1 The protection of Badgers Act 1992 aims to protect the species from persecution rather than its favourable conservation status as the species is common in Britain. The Protection of Badgers Act 1992 - this Act makes it illegal to wilfully kill, injure or take any Badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy or obstruct access to any part of a Badger sett. A sett is defined as 'any structure or place, which displays sign indicating current use by Badgers'.
- 2.2 In addition, the intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting the 'cruel ill treatment' of a Badger.

Licensing

- 2.3 Any works that may lead to the disturbance of Badgers is illegal without licence from Natural England. Natural England previously published guidelines (Badgers and Development, 2002) on the type of activity that should be licensed within certain distances of sett entrances. These activities included the use of heavy machinery within 30 m of any entrance to an active sett, lighter machinery within 20 m, or light work such as hand digging within 10 m. These guidelines have been updated in the Natural England publication 'Badgers and Development: A Guide to Best Practice Licensing (2009)' which sets out a more flexible approach to carrying out works in proximity of a Badger sett but any interference with sett will require a licence. Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or obstructed.
- 2.4 Permanent or temporary sett closure and disturbance can only be undertaken under licence from Natural England, usually between 1st July and 30th November.

3.0 Methodology

Field Survey

- 3.1 The site was visited on the 16th November 2016 and a Badger survey was carried out to establish the level of badger activity on site and in the immediate surroundings.
- 3.2 The Badger survey involved a search of the site and the surrounding area for a distance of at least 30 m where access was available for the presence of setts and associated field signs such as latrines, dung pits, prints, tracks and snuffle marks. The status of the setts and entrances were classified using the following (Harris *et al.*, 1989 and Neal and Cheesman, 1996):

Setts

Main setts

These are the most frequently used and appear to be large, well-established, often extensive and with large spoil heaps outside the entrances. Main setts are typically associated with an obvious network of paths leading to, from and around the entrances. There is generally only one main sett per social group of Badgers where the average number of entrances is 15.

Annexe setts

Regularly used, though not necessarily all of the time, with several entrances, annexe setts are smaller than the main sett and occur in close association with it (usually within 150m). They are normally linked to the main sett by clear well-used paths and consist of six entrance holes on average.

Subsidiary setts

These are further away from the main sett (50m or more) and typically comprise of five entrance holes on average. They are not continuously active with no obvious path connecting them to the main sett. For this reason their 'ownership' can often only be determined by bait-marking.

Outlying setts

Sporadically used with few holes, outlying setts can be found anywhere within the territory and usually have small spoil heaps, indicating that they are not very extensive underground. There are no obvious paths connecting them to other setts and Fox or Rabbit may colonise them when not in use by Badger.

Single Holes

These are also generally in sporadic use by Badgers and often exhibit few field signs to demonstrate evidence of badger activity. Some may be occupied by a breeding female and Fox may take over the hole when not in use by Badger.

Entrance Status

The size, status and level of activity of each sett can be assessed by counting the number of entrance holes. The degree of use of each entrance hole can be classified as follows:

Well-used holes with bedding - same as below but with bedding material present.

Well-used holes - clear of any debris or vegetation and are obviously in regular use. There may be evidence of regular excavation or fresh footprints.

Partially-used holes - not in regular use and with debris such as leaves and twigs in the entrance, or have moss and/or other plants growing in or around the entrance. To make use of the hole again, a minimum amount of clearance would be required.

Disused holes - have not been in use for some time, are partially or completely blocked, and would require considerable clearance before they could be used. Long-disused holes may simply be a depression in the ground together with the remains of a spoil heap, which may be covered in moss or plants.

4.0 Results

Field survey

4.1 The survey found the following evidence of Badgers on site (see Plan 1 for an illustration of the results)

- Badger Sett 1 within the line of trees extending from the north boundary into the larger field – 18 holes comprising 3 well-used holes with bedding, 1 well-used hole, 10 partially-used holes and 4 disused holes.
- Badger Sett 2 within the hedge and trees separating the two fields – 2 partially-used holes and 9 disused holes.
- Single hole 25 m to the north of Sett 2 – probably associated with Sett 2 but disused.
- Single dung pit towards the southeast of the larger field.
- Snuffle marks immediately to the north of Sett 1.
- Snuffle marks on the west, east, south and north boundaries.
- Badger trails along the north boundary, the majority of the east and west boundaries, across the site from Sett 1 to Sett 2 and to the boundaries, and to the southeast and south boundaries of the site.



Photograph 1: Hole with bedding (Sett 1).



Photograph 2: Well-used hole (Sett 1).



Photograph 3: Partially-used hole; leaf litter in entrance (Sett 1).



Photograph 4: Disused hole; partially collapsed and blocked with leaf litter (Sett 1).



Photograph 5: Partially-used hole (Sett 2).



Photograph 6: Disused hole (Sett 2).



Photograph 7: Dung pit.



Photograph 8: Snuffle marks immediately to the north of Sett 1.



Photograph 9: Trail along the north boundary.

5.0 Assessment

- 5.1 Sett 1 had 18 holes comprising 3 well-used holes with bedding, 1 well-used hole, 10 partially-used holes and 4 disused holes. It is therefore likely that this is the main sett, further confirmed by a general absence of suitable habitats in the surrounding area for this type of sett. Not all of the adjacent gardens could be viewed and none were accessed; however, it is highly unlikely that large setts would be present in these.
- 5.2 Sett 2 had 2 partially-used holes and 9 disused holes. This was located approximately 40 m to the west of Sett 1 and was linked to it by a well defined trail. The sett was not in use at the time of the present survey or during the ecological appraisal in September 2016, and the trail is likely to be created by Badgers travelling from the main sett to the west boundary. However, this sett fits the criteria for an annexe sett.
- 5.3 A disused single hole was also recorded 25 m to the north of Sett 2. This appeared to be separate but is likely to be associated with, although not directly connected to, Sett 2.
- 5.4 Evidence of recent Badger activity was present in the form of the well-used holes and also the obvious trails around the site, snuffle marks, and a single dung pit. The trails emanate from the main sett and extend in nearly all directions. It is clear that the Badgers forage on site but clear trails leading off site indicate that they also forage further afield, most likely in residential gardens and other extensive areas of grassland to the south and east.
- 5.5 The presence of just a single dung pit could indicate only limited Badger activity at the time of the survey but it is likely that the site is part of a wider territory that extends into the surrounding area and that the site itself is not actively marked. The site is surrounded by extensive areas of residential housing to the north and west, as well as a narrow strip of housing to the east. It is unlikely that other Badger groups are present in these areas and taking into account the results of this survey, the site's location and situation, it appears that the Badger group is the only group in the area.

6.0 Impacts and Mitigation

Impacts

- 6.1 The site is to be the subject of a planning application to permit the construction of a new housing development on site, which will require the clearance of the majority of the site. The current proposal would remove the hedge and trees separating the two fields where the annexe sett, Sett 2, is located, and the removal of the trees extending from the north boundary into the larger field where the main sett, Sett 1, is located. This would require the destruction of the setts.
- 6.2 The option of retaining the setts in-situ was considered but not deemed to be feasible. Any enclosing of the sett areas by the development would isolate them from foraging habitats in areas accessed of site to the south, east and west as indicated by the Badger trails identified on site, possibly resulting in abandonment. The retention of the setts in their current location would require areas of connecting habitat to the wider area in order for the setts to remain viable and these would result in a significant loss of the development potential for the site making any development unfeasible.
- 6.3 In the absence of mitigation, the following impacts have been identified with respect to Badgers and the proposed development:
- Destruction of the main sett with currently four active holes resulting in the permanent loss of the sett, disturbance of Badgers within, injury and death of individuals.
 - Destruction of the annexe sett, resulting in the permanent loss of the sett, and potential disturbance of Badgers within, injury and death of individuals, if the sett becomes active again.
 - Permanent loss of approximately 4 ha of potential Badger foraging habitat. The survey results to date indicate only partial use of the site but the development has the potential to fragment Badger foraging areas which are evident in all directions.

Mitigation

- 6.4 It is clear that the retention of the Badger setts in-situ is not feasible and the setts will therefore require closure to exclude Badgers before they are destroyed. This will require a licence from Natural England and in order to obtain a licence appropriate mitigation and compensation will need to be provided. This will include the construction of an artificial sett to compensate for the loss of the main sett, which is currently in use and likely to be so throughout the year. The annexe sett was not in use at the time of the survey or in September 2016, and no additional setts are proposed to compensate for its removal at this time
- 6.5 It should be noted that Badger activity is likely to vary over the course of the year and over time. Badgers are constantly maintaining existing and opening new setts and as such a survey of the site would be carried out closer to the time of the licence application in order to ensure that the mitigation/compensation proposed is appropriate. Badger activity over the summer of 2017 would be monitored in order to record and changes in activity and changes to the mitigation be considered at the earliest opportunity.

- 6.6 Further surveys in the form of bait marking are often required to determine territorial boundaries of individual Badger groups; however, in this case, bait marking is not considered to be necessary as it is clear that this is the only Badger group in the area and the whole site falls within this territory meaning the new artificial sett proposed for the site would not be within the territory of a rival group.
- 6.7 The artificial sett would be constructed before the any attempt is made to exclude Badgers from the active sett. Sett closure can only take place from July to November inclusive and the one-way gates that are used to close the sett by allowing Badgers to exit but not return, must be in place for a minimum of 21 days meaning the latest time they can be installed is the first week of November.
- 6.8 The location of the new sett would be within an area of green space in the central south corner of the site, which is a relatively remote corner of the site where it is less likely to be disturbed. The area would be fenced with post and rail fencing to provide a clear boundary that will not impede the movement of Badgers, and trees will be planted to screen the area.
- 6.9 With respect to foraging territory the loss of habitat is likely to be up to 4 ha although not all of this appears to be utilised and it is probable that new gardens and green spaces, particularly those surrounding the sett and extending into the communal area of the proposed adjacent flats, will still provide a significant foraging resource.
- 6.10 With regard to connectivity to the wider area and the displacement of Badgers from the areas currently used on site. Similarly to the current sett, the location would allow bats to freely access areas to the south, east and west where Badgers are already foraging as evidenced by snuffle marks and the Badger trails across the site. The development would inhibit movement to the north where trails indicate that Badgers regularly access gardens but this is unlikely to have a significant impact as similar habitat will be available on site.
- 6.11 The likely range size of a social group of Badgers is 40 to 50 ha but given the urban nature of much of the surroundings the territory of this group may be smaller if it can obtain enough food from bird feeders, food waste or artificial feeding. It is generally considered that only losses in excess of 25% of the range are likely to be significant. In this context the loss of the foraging habitat on site would be a minor negative impact but with the potential for being neutral when the once the development with its green spaces are completed/established.

Artificial sett

- 6.12 The artificial sett would follow the standard design for a main sett. This requires six separate pits to be dug and installing three 2 x 2 m and three 1 x 1 m chambers, which are constructed from marine ply for the sides and roof and stakes to hold them in place. Some sides are left open to allow Badgers to create additional tunnels and chambers. To link the chambers together and to the surface, 300 mm plastic pipes are used with the bottoms cut out to provide contact with the soil. The structure is then covered with soil and planted with tree and shrub saplings. The whole structure would be expected to occupy an area of approximately 20 x 20 m to allow sufficient spacing of the chambers and creation of entrance tunnels.

Other precautions

- 6.13 During the construction phase of the project any trenches and other excavations would be back-filled before nightfall or a ramp left to allow animals to easily exit, and any open pipes larger than 150 mm would be capped off overnight.

Post development monitoring

- 6.14 It will be necessary to monitor the sett and Badger activity post development. Any timetable for monitoring is dependent on when works take place which is currently unknown. However, the sett would be checked annually for three years during the summer months to establish whether it is still used to what extent and carry out and remedial/repair works. Any reduction in use will be investigated and modifications made as appropriate. These could include modifications to the sett or the removal/modification or unforeseen/introduced barriers to Badger movement.

7.0 References

Cresswell, W.J. & Harris, S. 1988. *Foraging behaviour and home-range utilisation in a suburban badger (*Meles meles*) population*. Mammal Review, (18) (P.37- 49.)

Natural England (2009). *Badgers and Development: A Guide to Best Practice and Licensing*

Neal, E. & Cheesman, C. (1996). *Badgers*. T. & A. D. Poyser Ltd: London.

The Protection of Badgers Act 1992, (c.51), HMSO: London.

8.0 Plans

Badger Survey Results



Mitigation

Proposed artificial Badger sett location (red arrow)



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