



EASTERGATE ECOLOGY

BADGER SURVEY

Prepared for Linden Homes

by

Hankinson Duckett Associates

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HDA Document Control and Quality Assurance Record

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1 INTRODUCTION

1.1 Introduction and site description

1.1.1 This report describes the results of a survey for Badgers (*Meles meles*) carried out at approximately 11.5ha of land and its immediate surrounds at Eastergate, West Sussex, hereinafter referred to as the site. The site centre is located by National Grid Reference SU 948055. The study was commissioned by Linden Homes in July 2013.

1.1.2 The site is located on the northern edge of Eastergate and is bordered to the south by Barnham Road with residential development beyond, to the east by a public footpath with farmland beyond and to the west by residential development fronting Fontwell Avenue and Collins Close. Unmanaged orchard and farmland extends to the north. The site boundary is shown in *Appendix A*. The area surveyed included the site and areas within 30m of the site boundary thought likely to provide suitable habitat for Badgers.

1.1.3 In general terms, the site comprises a disused fruit farm characterised by areas of unmanaged orchard separated by managed species-poor semi-improved grassland fields and areas of species-poor semi-improved grassland/ scrub mosaic. Field boundaries within and around the site generally comprise fences with mature tree lines and a single stretch of species-poor hedgerow.

1.1.4 Further information on the distribution of habitats across each area of the site is provided in the Ecological Appraisal (HDA, 2013).

1.2 Legislative context

1.2.1 Badgers and their setts are protected under the Protection of Badgers Act 1992 (HMSO, 1992). Unless permitted under a licence issued by Natural England this makes it an offence to:

- kill, injure or capture a Badger;
- damage, destroy or obstruct access to a Badger sett; or
- disturb Badgers while they are occupying a sett.

1.3 Scope and purpose of the report

1.3.1 The initial desk study and Phase 1 Habitat survey carried out by HDA in 2013 found that the site supports suitable habitats for Badgers in the form of orchards, woodland, scrub and grassland. Although no records of Badger were provided during the desk study, an active outlying Badger sett was recorded on the edge of an area of scrub to the east of the site. In addition, Badgers have been recorded using the site during subsequent site visits.

1.3.2 A Badger survey was subsequently commissioned in order to:

- i) Assess the relative importance of different parts of the survey area for Badgers; and
- ii) Inform an assessment of the likely impacts potentially arising from the proposed development on Badgers and give recommendations for impact avoidance, minimisation and mitigation.

1.3.3 The area surveyed included the site and areas within at least 30m of the site boundary thought likely to provide suitable habitat for Badgers.

2 METHODOLOGY

2.1 A detailed walkover survey of land within and adjacent to the site was undertaken on 18th February 2014 by Clare Parker MCIEEM of Hankinson Duckett Associates. The surveys involved walking around the survey area looking for evidence of Badger activity including setts and other field signs such as footprints, latrines, feeding scrapes and hairs. The survey route incorporated all habitats present and followed all boundaries. All holes and scrapes were examined to assess what species was using or had dug them. For each confirmed Badger sett a recording card was completed detailing the type of sett, number of entrances and level of activity (from disused to well used). Completed recording cards are given in *Appendix B* and descriptions of the sett type classifications used are given in *Appendix C*.

2.2 A subjective assessment of the foraging potential of the habitats within the site was also made, based on the availability of potential food sources:

- Good foraging habitat: provides Badgers with a variety of foraging opportunities through the year (e.g. agriculturally improved pasture, hedgerows and gardens).
- Moderate foraging habitat: foraging opportunities can be limited by season and management regime (e.g. rough grassland, woodland and scrub).
- Poor foraging habitat: areas that provide few foraging opportunities for Badgers (e.g. cereal crops, heathland, moorland and wetlands).

2.3 A total of 5 hours were spent carrying out the initial field survey. Weather conditions were cool and overcast.

Limitations

2.4 As is often the case with Badger surveys, the density of some areas of scrub was such that it was not possible to survey them exhaustively, and these areas are indicated on the plan in *Appendix A*. Such areas were circumnavigated and examined for evidence of paths leading into them. With the exception of a large scrub area to the south east, into which animal paths lead (with much evidence of rabbits) no such paths or any other evidence of Badger activity (e.g. latrines or footprints) was found within accessible areas

of the scrub, and therefore this factor is not considered a significant limitation to this survey. Specific recommendations in relation to these areas are given in Section 4.

- 2.5 A minority of land outside the site, but within 30m of the site boundary, could not be accessed or viewed adequately to confirm the absence of Badgers, in particular where gardens and commercial properties occur along sections of the southern and western site boundaries. It is considered unlikely however that these areas contained active Badger setts at the time of survey as they were either located within fenced, small gardens and/or no associated signs of Badger using these areas were recorded during the survey.

3 RESULTS

3.1 Setts

- 3.1.1 Five setts were recorded during the survey. The location of the setts are shown on the map in *Appendix A*, and Sett Recording Cards are given in *Appendix B*.

Sett A: Main sett

- 3.1.2 A main sett was recorded off-site, approximately 60m to the north of the site boundary. The sett is located within an area of scrubby unmanaged orchard and comprised at least 11 entrances in total at the time of the survey, of which five were well used, five partially used and one disused. Fresh bedding, tracks, droppings and scratching on a tree confirmed recent use by Badgers.

Sett B: Annexe sett

- 3.1.3 A probable annex sett was recorded 300m to the south east of the main sett within an area of disused apple orchard. The sett surrounds an old Apple tree encased in ivy and comprised 9 entrances in total at the time of the survey, of which three were well used, four partially used and two disused. Fresh bedding, tracks and hairs present between some of the holes confirmed recent use by Badgers.

Sett C: Outlier sett

- 3.1.4 An outlier sett was recorded 130m south of the main sett within a small area of suitable outgrown orchard. The sett comprised one partially used hole, with evidence of a historic large spoil heap. The tunnel had partially collapsed exposing the tunnel a metre from the entrance. Badger hairs and dung pits were recorded showing evidence of Badgers in the area however, Rabbit activity was also present.

Sett D: Outlier sett

- 3.1.5 An outlier sett was recorded approximately 160m east of the annex sett on the edge of an area of dense scrub on the eastern boundary of the site. The sett comprised one hole,

however no current evidence of Badger use was identified. Rabbit activity was recorded. This sett is recorded as being in current use at the time of the Phase 1 Habitat Survey carried out in support of the Ecological Appraisal in June 2013.

Sett E: Outlier sett

- 3.1.6 An outlier sett was recorded approximately 150m south of the main sett within an area of scrubby unmanaged orchard. The sett comprised two holes both of which were disused by Badgers at the time of the survey. Evidence of Rabbits were recorded using the tunnels.

3.2 Latrines

- 3.2.1 No well-used latrines were noted during the course of the survey however Badger droppings were recorded across the site. These droppings were solitary and not in dung pits which are usually associated with territory marking. This could be indicative of a very low density of Badgers using the survey area or distance from neighbouring social groups which would reduce levels of territorial behaviour.

3.3 Paths

- 3.3.1 A number of well-used mammal paths were recorded within the site, particularly passing through hedgerows and areas of scrub. It is likely that these paths are used by Badgers, as well as Rabbits, deer and Foxes which have also been recorded at the site. Only those paths showing definitive evidence of use by Badgers are illustrated in *Appendix A*.

3.4 Foraging habitat

- 3.4.1 Moderate foraging habitat is provided across most of the site, in the form of the dense scrub, woodland and disused orchards. Good foraging habitat is provided by the grazing pastures and open grassland areas to the south and east of the site.

4 ASSESSMENT AND RECOMMENDATIONS

4.1 Badger setts

- 4.1.1 Three active Badger setts (Setts A, B & C) and two non-active Badger setts (Setts D & E) was recorded during the survey.
- 4.1.2 The Protection of Badgers Act protects Badgers and their setts. Any works involving the disturbance of a Badger occupying a sett, or destruction of a sett displaying signs indicating current use by a Badger (Natural England, 2009), will require a licence from Natural England.
- 4.1.3 Sett A is a main sett, located approximately 60m beyond the northern site boundary. It is anticipated that there will be no direct impacts on this sett due to its distance from the

site boundary. Development proposals should seek to ensure that areas of foraging habitat remain readily accessible.

- 4.1.4 Sett B is an annex sett and therefore priority should be given to its retention within any development scheme, in an undisturbed area of the site. Development proposals should seek to maintain a standoff of 20m from the sett and ensure that areas of foraging habitat remain readily accessible. Where appropriate, the buffer zone should be planted with native or fruit and nut producing species appropriate to the local area.
- 4.1.5 Setts C, D & E are all outlier setts with varying levels of current Badger activity recorded. Where possible the outlying setts should be retained in undisturbed areas of the site, maintaining a standoff buffer of at least 20m from the setts and ensure that areas of foraging habitat remain readily accessible. Outlying and subsidiary setts are usually only temporarily occupied and by definition suitable alternatives should exist. Loss of these setts would therefore be likely to have a lesser effect on the Badger social group than loss of the annex sett.
- 4.1.6 In the event that the loss of an active sett is unavoidable, it will be necessary to apply for a Natural England licence to close the sett prior to development. The recommended method for sett closure involves the entrances being “soft stopped” initially to confirm current use, followed by the installation of one-way gates at the sett entrances. Closure of setts usually takes at least six weeks and licences are usually only granted for closure outside of the Badger breeding season (December to June inclusive). All procedures relating to the closure of a sett would need to be subject to a detailed method statement and monitored by the licensee and/or accredited agents.
- 4.1.7 In the event that the loss of an main or annex sett is unavoidable, its loss should be mitigated through the provision of an artificial Badger sett in an area of suitable undisturbed habitat elsewhere within the site. The new sett should be located as close to the original sett as possible and be provided in advance of the old sett being lost. This work would also require a licence from Natural England. Licences for works affecting Badgers are not usually issued during the period 1st December to 30th June, especially where a main sett is affected, to avoid disturbance to Badgers during the breeding season.
- 4.1.8 Consideration should also be given to any works within 30m of a Badger sett which could potentially cause disturbance to Badgers occupying a sett as defined by Natural England (2009). Where necessary, such works may need to be licensed and/ or carried out outside the Badger breeding season and mitigation such as screening, exclusion zones and restricted working hours implemented.

- 4.1.9 Badgers are very mobile animals and occasionally setts may be abandoned and old setts reclaimed. It would therefore be prudent to resurvey the setts to confirm their status prior to development commencing, in addition to a resurvey of the site and adjacent land to confirm that no new or re-occupied setts have been dug within the vicinity of the proposed development. If new setts may be affected by the proposed development a licence for sett closure will need to be sought from Natural England prior to development.

4.2 Foraging habitat and connectivity

- 4.2.1 Existing habitats within the site of potential value to foraging Badgers include woodland, disused orchards, scrub, grazing pasture and grassland habitats. Habitats of similar quality to those within the application site continue to the north of the site. The development proposals should ensure that opportunities for the movement of Badgers and other wildlife around the site are maintained through the retention of undisturbed semi-natural habitats between retained setts and suitable foraging habitat within the application site and the wider area. Planting schemes for the proposed development should also give consideration to increasing their value to foraging Badgers through the inclusion and retention of fruit and nut bearing species.

- 4.2.2 During the construction phase, any steep sided holes left open overnight should be equipped with a mammal ladder (a reinforced plywood board >60cm wide set at an angle of no greater than 30° to the base of the pit) to prevent entrapment.

5 CONCLUSION

- 5.1 A total of three currently active setts were recorded within the survey area, including one main sett, one outlier sett and one outlier sett. Two disused outlying setts were also recorded. Subject to the implementation of the measures identified above to avoid impacts on Badgers during the construction works and to maintain the long-term presence of suitable Badger foraging habitat and corridors for movement within and around the application site and wider estate, it is unlikely that the proposed development would have a significant adverse impact on the local Badger population.

6 REFERENCES

English Nature (2002) *Badgers and Development*. English Nature, Peterborough.

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Harris S Cresswell P and Jefferies D (1991) *Surveying Badgers*. The Mammal Society, Bristol.

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Natural England (2007) *Badgers and Development: A Guide to Best Practice and Licensing*. Natural England.

Natural England (2009) *Guidance on 'Current Use' in the definition of a Badger Sett*. Natural England.

Natural England (2009) *Interpretation of 'Disturbance' in relation to Badgers occupying a sett*. Natural England.

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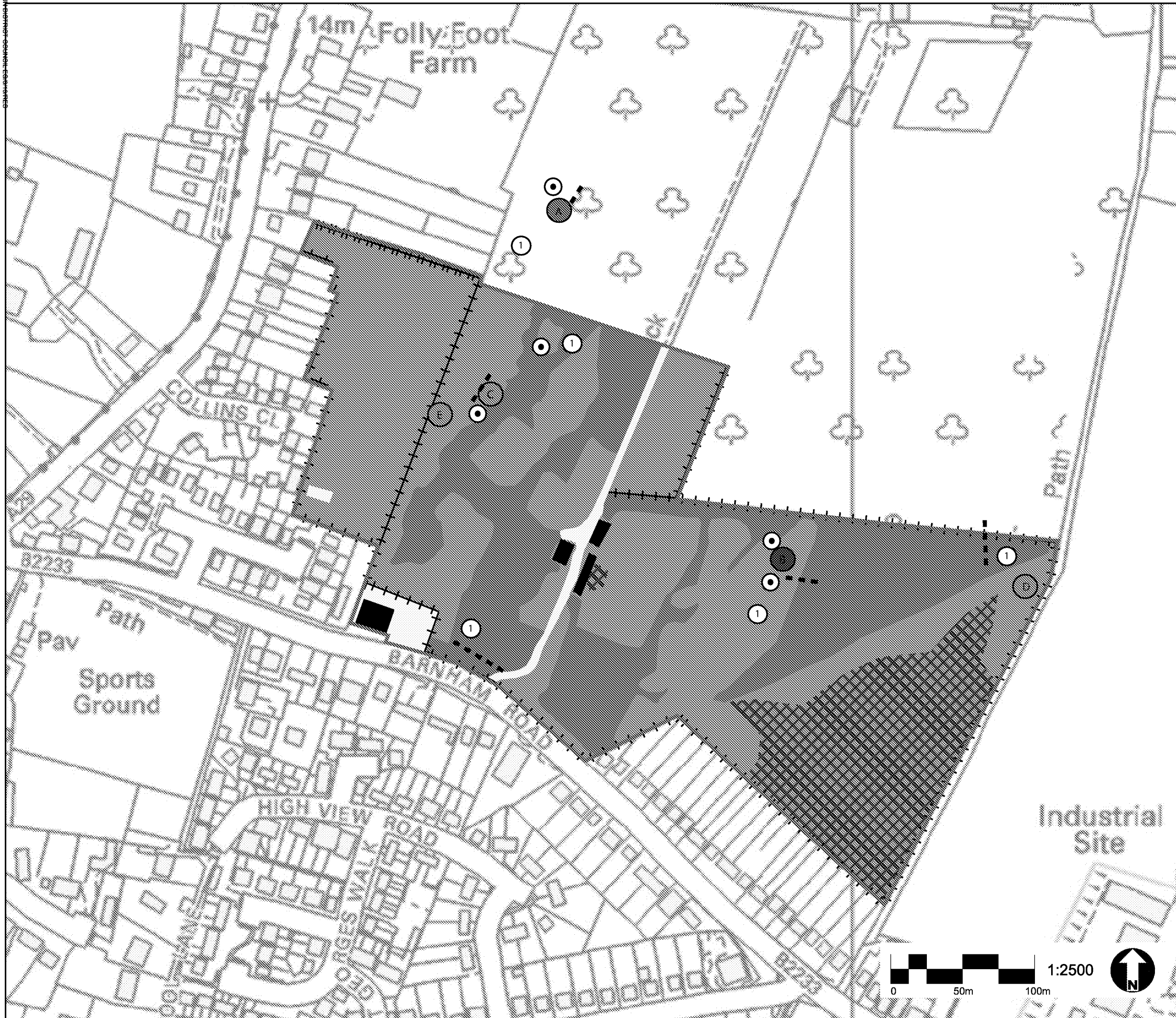
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APPENDIX A

Badger Survey Results Plan



KEY

- Site boundary
- Buildings
- Fence
- Main Sett
- Annex Sett
- Outlier Sett
- Badger path
- Badger dropping
- Badger foraging signs
- Area of dense scrub with limited access for survey

Suitability of Habitat for Badgers

- Good
- Moderate
- Poor

CLIENT:
Linden Homes
PROJECT:
Eastergate Ecology
TITLE:
Badger Survey Plan
SCALE AT A3:
1:2,500
DATE:
February 2014
2136.9 / 06

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APPENDIX B
Field Recording Card

BADGER SETT RECORDING CARD

Site: Eastergate

Sett ref: A

Date: 18/2/14

Grid Reference:

Surveyor

Habitat

Woodland Scrub Hedge Ditch Field Garden
Quarry Embankment / Cutting Conifer plantation Other

Notes On the edge of a woodland area, heavily dominated by
Scrubby species

Number of Entrances Well used 11 Partially used 11 Disused 1

Notes Evidence of rabbits

Category of Sett

Main (many holes with conspicuous spoil heaps, looks active. Well worn paths. Can be disused)

Annexe (close to main (<150m) usually connected to it by well-worn paths)

Subsidiary (few holes (3-5). At least 50m from main with no obvious paths)

Outlying (one or two holes, used sporadically, no obvious paths)

Notes

Signs of Occupation

Bedding

Hairs

Tracks

Dung Pits

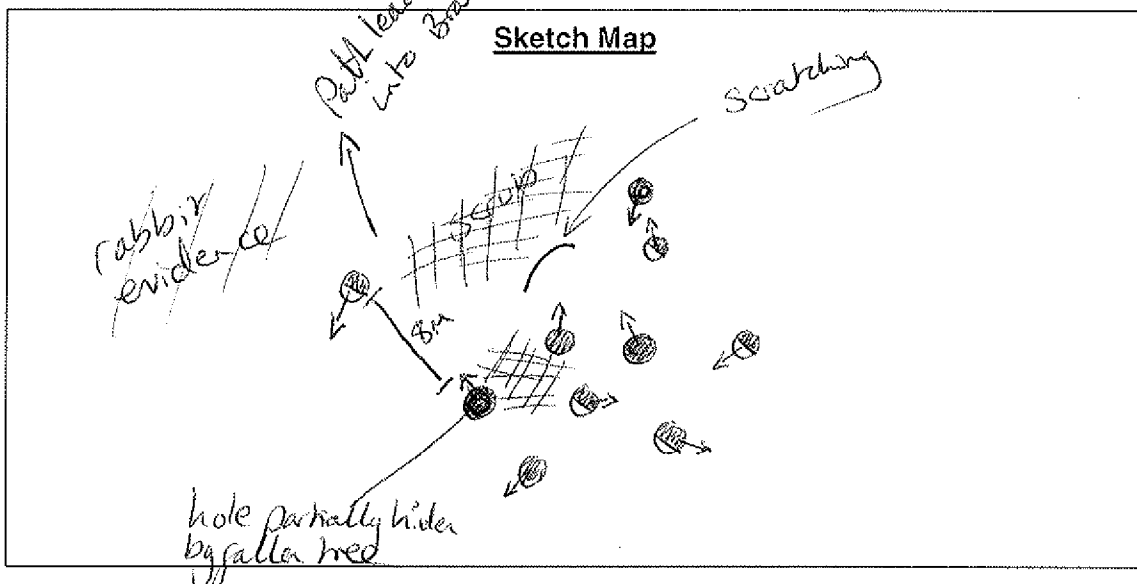
Scratching

Notes

L on tree

Vulnerability (i.e. ease of public access; obviousness; nearby development)

Notes



BADGER SETT RECORDING CARD

Site: Eastgate

Sett ref: B

Date: 18/2/14

Grid Reference:

Surveyor

Habitat

Woodland

Scrub

Hedge

Ditch

Field

Garden

Quarry

Embankment / Cutting

Conifer plantation

Other

Notes: Open abandoned apple orchard, heavily ivy clad trees

Number of Entrances Well used III Partially used III Disused I

Notes: little spoil heaps, heavily trampled between holes, surrounds an old apple tree

Category of Sett

Main (many holes with conspicuous spoil heaps, looks active. Well worn paths. Can be disused)

Annexe (close to main (<150m) usually connected to it by well-worn paths)

Subsidiary (few holes (3-5). At least 50m from main with no obvious paths)

Outlying (one or two holes, used sporadically, no obvious paths)

Notes:

Signs of Occupation

Bedding

Hairs

Tracks

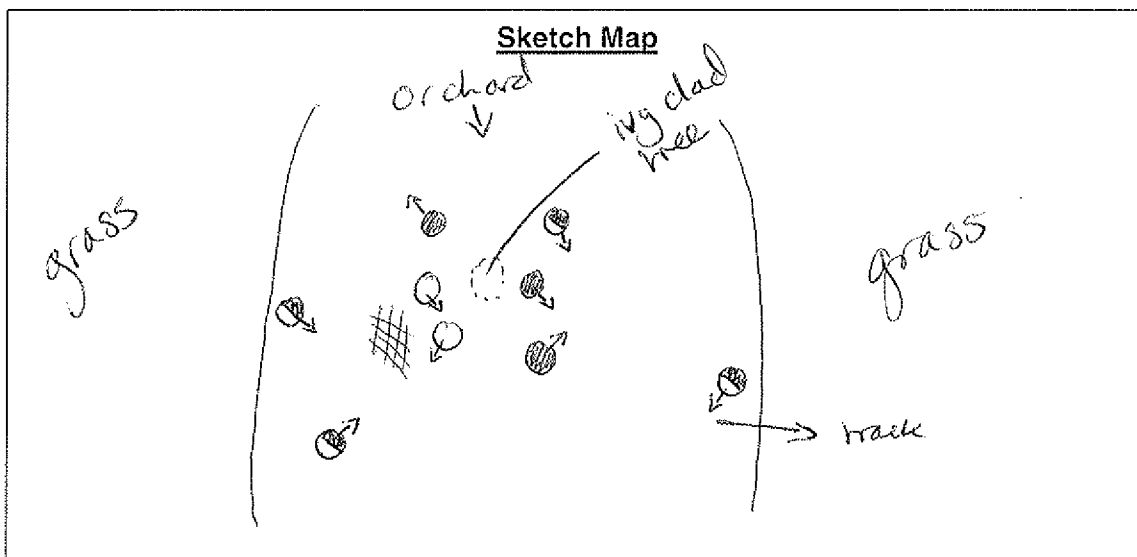
Dung Pits

Scratching

Notes: Ivy has been stripped off apple tree to be used as bedding

Vulnerability (i.e. ease of public access; obviousness; nearby development)

Notes:



BADGER SETT RECORDING CARD

Site: Eastringate
Sett ref: C

Date: 18/2/14

Grid Reference:

Surveyor

Habitat

Woodland Scrub Hedge Ditch Field Garden
Quarry Embankment / Cutting Conifer plantation Other

Notes.....
.....

Number of Entrances Well used _____ Partially used 1 Disused _____

Notes: Historic large spoil heap, partially collapsed tunnel
.....
.....

Category of Sett

Main (many holes with conspicuous spoil heaps, looks active. Well worn paths. Can be disused)
Annexe (close to main (<150m) usually connected to it by well-worn paths)
Subsidiary (few holes (3-5). At least 50m from main with no obvious paths)
Outlying (one or two holes, used sporadically, no obvious paths)

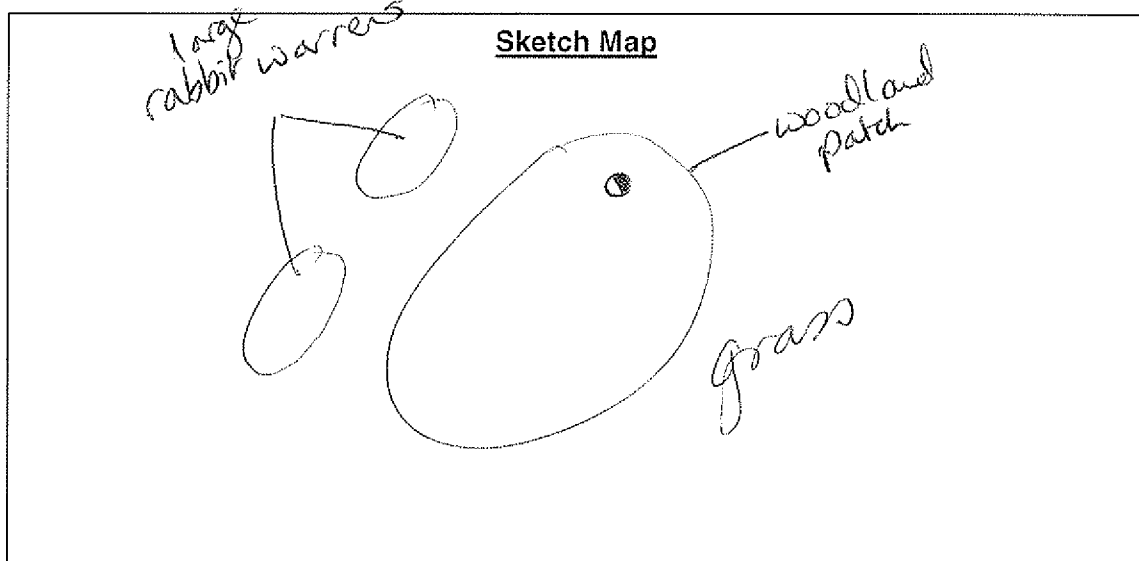
Notes.....
.....

Signs of Occupation Bedding Hairs Tracks Dung Pits Scratching

Notes.....
.....

Vulnerability (i.e. ease of public access; obviousness; nearby development)

Notes.....
.....



Well used entrance



Disused entrance



Partially used entrance

BADGER SETT RECORDING CARD

Site: *Eastgate*

Sett ref: *D*

Date: *18/2/14*

Grid Reference:

Surveyor

Habitat

☒ Woodland

☐ Scrub

☐ Hedge

☐ Ditch

☐ Field

☐ Garden

☐ Quarry

☐ Embankment / Cutting

☐ Conifer plantation

☐ Other

Notes: *Abandoned orchard, now heavily dominated with scrub species*

Number of Entrances Well used ☐ Partially used ☐ Disused *1*

Notes: *Rabbit evidence*

Category of Sett

Main (many holes with conspicuous spoil heaps, looks active. Well worn paths. Can be disused)

Annexe (close to main (<150m) usually connected to it by well-worn paths)

Subsidiary (few holes (3-5). At least 50m from main with no obvious paths)

☒ Outlying (one or two holes, used sporadically, no obvious paths)

Notes: *Current disused*

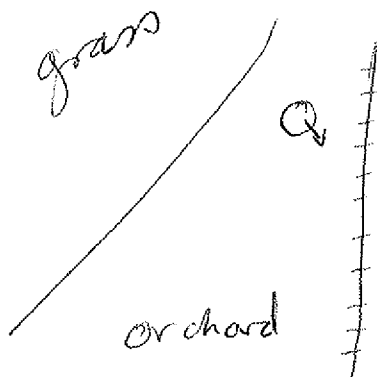
Signs of Occupation Bedding ☐ Hairs ☐ Tracks ☐ Dung Pits ☐ Scratching ☐

Notes: *None by Badgers*

Vulnerability (i.e. ease of public access; obviousness; nearby development)

Notes:

Sketch Map



BADGER SETT RECORDING CARD

Site: *Eastergate*

Sett ref: *E*

Date: *18/2/14*

Grid Reference:

Surveyor

Habitat

Woodland *Scrub* Hedge Ditch Field Garden
Quarry Embankment / Cutting Conifer plantation Other

Notes.....
.....

Number of Entrances Well used _____ Partially used _____ Disused 11

Notes... *Evidence of rabbit occupation*
.....

Category of Sett

Main (many holes with conspicuous spoil heaps, looks active. Well worn paths. Can be disused)

Annexe (close to main (<150m) usually connected to it by well-worn paths)

Subsidiary (few holes (3-5). At least 50m from main with no obvious paths)

Outlying (one or two holes, used sporadically, no obvious paths)

Notes... *Disused currently by Badgers*
.....

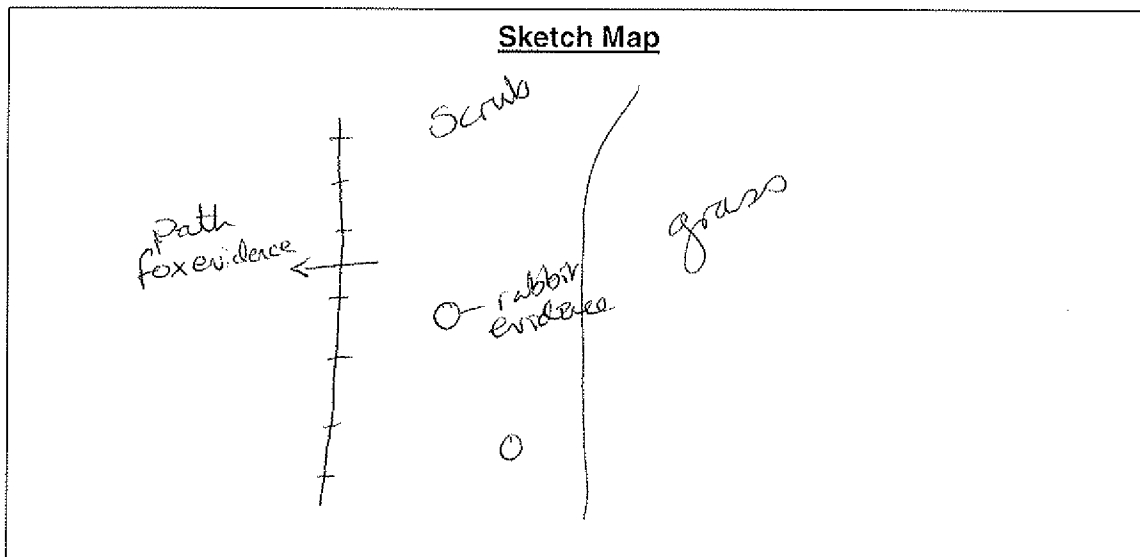
Signs of Occupation Bedding Hairs Tracks Dung Pits Scratching

Notes... *None by Badgers*
.....

Vulnerability (i.e. ease of public access; obviousness; nearby development)

Notes.....
.....

Sketch Map



APPENDIX C

Badger Sett Type Definitions

Badger Sett Type Definitions

From: Harris, S., Cresswell, P. and Jefferies, D. (1981) *Surveying Badgers*. The Mammal Society, Bristol.

In most cases each social group of Badgers has more than one sett in its territory, and these vary in status and level of use. Whenever there is a Badger problem in an area, it is essential to undertake a thorough survey to establish (i) how many social groups may be involved and (ii) the distribution and status of any setts being threatened. The extent of any problem depends on the type of sett under threat, and so the different types of Badger sett occupied by a single group of Badgers are described below.

Main setts: Normally each group of Badgers has only one main sett, and so by counting all the main setts in an area you can find out how many social groups of Badgers are present. Main setts usually have several holes with large spoil heaps, and the sett generally looks well used. There will be obvious paths to and from the sett and between sett entrances. In the British national Badger survey the average number of holes for a main sett was twelve, although main setts may be much smaller, even a single hole in exceptional circumstances. Although normally the breeding sett, and in continuous use, it is possible to find a main sett that has become disused due to excessive interference, illegal digging, tree felling or some other reason.

Annexe setts: these are often close to a main sett, normally less than 150 metres away, and are connected to the main sett by one or more obvious well-worn paths. Usually they have several holes but may not be in use all the time, even if the main sett is very active. The average number of holes per annexe sett in the British survey was eight.

Subsidiary setts: These are usually at least 50 metres from a main sett, and do not have an obvious path connecting with another sett. They are not continuously active. The average number of holes per subsidiary sett in the British survey was four.

Outlying setts: These often have little spoil outside the holes, have no obvious path connecting them with another sett, and are only used sporadically. When not in use by Badgers, they are often taken over by foxes or even rabbits. However, they can still be recognised as Badger setts by the shape of the tunnel (not the actual entrance hole), which is at least 25 centimetres in diameter and rounded or a flattened oval shape (i.e. broader than high). Fox and Rabbit tunnels are smaller and often taller than broad. The average number of holes per outlying sett in the British survey was two.

Note: These sett definitions form part of a continuum, and setts do not always fit neatly into these categories.