

EASTLEIGH BOROUGH COUNCIL

One Horton Heath

Appendix 10.1: Desk Study

1 INTRODUCTION

The aim of the desk study is to collate existing ecological records for the site to help define the likely zone of influence of the proposed development and the required scope of detailed ecological surveys and assessment of potential ecological effects. Obtaining existing records is an important part of the assessment process as it provides information on issues that may not be apparent during field surveys and assists in assessing the nature conservation value of the site, the likely presence of rare or legally protected species, and identifies potential constraints to development. The data search was also used to identify any further surveys that may be required at the site.

2 METHODOLOGY

2.1 UPDATED DESK STUDY

The aim of the desk study is to collate existing ecological records for the site to help define the likely zone of influence of the proposed development and the required scope of detailed ecological surveys and assessment of potential ecological impacts. Obtaining existing records is an important part of the assessment process as it provides information on issues that may not be apparent during field surveys and assists in assessing the nature conservation value of the site, the likely presence of rare or legally protected species, and identifies potential constraints to development. The data search was also used to identify any further surveys that may be required at the site.

Existing non-statutory designated site information and records of notable and protected species were obtained from within the site boundary and a 2km buffer. This ecological information was sourced from the Hampshire Biodiversity Information Centre (HBIC) in October 2018 and update in March 2020.

The Multi-Agency Geographical Information for the Countryside (MAGIC) website (www.magic.gov.uk) was used to search for statutory designated sites of international nature conservation importance within 10km of the site; and for statutory sites of national or local nature conservation importance within 2km of the site.

The following strategic documents for Eastleigh were also reviewed with reference to the habitats and species present, or likely to be present, within or adjacent to the site:

- Rushbrook, B (2018). Southern Damselfly Survey and Habitat Assessment Study, Eastleigh Borough.
- Eastleigh Borough Council (2018). Eastleigh Borough Local Plan 2016-2036. Great Crested Newt Study
- The Highwood Group and Drew Smith Group (2017). Strategic Eastleigh Site Bat Trapping and Radio-tracking Baseline Report and Evaluation
- Eastleigh Borough Council (2012) Biodiversity Action Plan for Eastleigh Borough 2012 – 2022.

2.2 HISTORIC ECOLOGY SURVEYS

A series of detailed ecological surveys were undertaken across the site during the period 2014 to 2016 in support of the previous outline planning applications. These were reviewed in detail with the relevant survey results summarised in Section 3.2.

3 SURVEY RESULTS

3.1 UPDATED DESK STUDY

3.1.1 Statutory designated sites

There are 5 statutorily-designated sites of international importance within 10km of the Site. Further information is presented in Table 1 below. A plan showing the locations of these statutory sites is contained in Appendix A.

Table 1. Statutory sites of international importance

Site name	Reason for designation	Location relevant to Horton Heath site boundary
Solent and Southampton Water Special Protection Area (SPA)	This site qualifies under Article 4.1 of the Birds Directive (79/409/EEC) by supporting breeding populations of European importance of the following species listed on Annex I of the Directive: common tern, little tern, Mediterranean gull, roseate tern, sandwich tern. This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory over-wintering species: black-tailed godwit, dark-bellied brent goose, ringed plover, teal. The area also qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl	4.3 km south east
Solent and Southampton Water Ramsar Site	The site is designated under the following Ramsar criteria: Criterion 1: The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs Criterion 2: The site supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants are represented on site. Criterion 5: supports a species assemblage in the winter of international importance (assemblage of wintering waterfowl). Criterion 6: supports species populations of international importance (migratory ringed	3.9 km south east

	plover; and wintering black-tailed godwit, teal and dark-bellied brent geese).	
River Itchen Special Area of Conservation (SAC)	Supports the following Annex I habitats that are a primary reason for designation: Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. The Itchen is a classic example of a sub-type 1 chalk river. The river is dominated throughout by aquatic <i>Ranunculus</i> spp. The headwaters contain pond water-crowfoot <i>Ranunculus peltatus</i>, while two <i>Ranunculus</i> species occur further downstream: stream water-crowfoot <i>R. penicillatus</i> ssp. <i>pseudofluitans</i>, a species especially characteristic of calcium-rich rivers, and river water-crowfoot <i>R. fluitans</i>. Supports the following Annex II species which are a primary reason for selection of this site: Southern damselfly <i>Coenagrion mercuriale</i>. The River Itchen comprises one of the major population centres in the UK for this species. It also represents a population in a managed chalk-river flood plain, an unusual habitat for this species in the UK, rather than on heathland Bullhead <i>Cottus gobio</i>. The Itchen is a classic chalk river that supports high densities of this species throughout much of its length. The river provides good water quality, extensive beds of submerged plants that act as a refuge for the species, and coarse sediments that are vital for spawning and juvenile development. The site also supports the following Annex II species present as qualifying features but not as primary reasons for site selection: White-clawed crayfish <i>Austropotamobius pallipes</i> Brook lamprey <i>Lampetra planeri</i> Atlantic salmon <i>Salmo salar</i> Otter <i>Lutra lutra</i>	1.5km north west

There are 2 statutorily-designated sites of national importance within 2km of the Site. Further information is presented in Table 2 below. A plan showing the locations of these statutory sites is contained in Appendix A.

Table 2. Statutory sites of national importance

Site name	Reason for designation	Location relevant to Horton Heath site boundary
Moorgreen Meadows SSSI	Neutral meadows and alder wood flanking a small tributary of the River Hamble on the Bracklesham Beds of the Hampshire Basin. The meadows lie on alluvium and clay with thin deposits of peat. The sward comprises at least 17 co- dominant herbs and grasses and is of exceptional scientific importance for its populations of marsh orchids <i>Dactylorhiza</i> . In particular the site includes a geographically isolated population of the Northern Marsh Orchid <i>D. purpurella</i> , the nearest other localities being in Wales, Staffordshire and Yorkshire. The plants grow in close juxtaposition to four other species of the genus <i>Dactylorhiza</i> – early marsh orchid <i>D. incarnata</i> , common spotted orchid <i>D. fuchsii</i> , heath spotted orchid <i>D. maculate</i> , and southern marsh orchid <i>D. praetermissa</i> . Hybrids between the five species occur in every combination.	1.2km south west
River Itchen SSSI	This site is notified for classic chalk stream and river, fen meadow, flood pasture and swamp habitats, particularly formations of in-channel vegetation dominated by water crowfoot <i>Ranunculus</i> spp, riparian vegetation communities (including wet woodlands) and side channels, runnels and ditches associated with the main river and former water meadows. The site supports nationally important invertebrate assemblages; and is also notified for the assemblage of breeding birds including tufted duck <i>Aythya fuligula</i> , pochard <i>A. ferina</i> and shoveler <i>Anas clypeata</i> , the waders lapwing <i>Vanellus vanellus</i> , redshank <i>Tringa totanus</i> and snipe <i>Gallinago gallinago</i> , and wetland passerines including sedge warbler <i>Acrocephalus schoenobaenus</i> , reed warbler <i>A. scirpaceus</i> and Cetti's warbler <i>Cettia cettia</i> . See Table 1 above for other SSSI notification features.	1.5km north west

3.1.2 Non-statutory designated sites

There are 2 non-statutory designated sites within 2km of the Site. Further information is presented in Table 3 below. A plan showing the locations of these sites is contained in Appendix A.

Table 3. Non-statutory designated sites

Site name	Reason for designation	Location relevant to Horton Heath site boundary
Chalcroft Distribution Park Site of Importance for Nature Conservation (SINC)	The Chalcroft Distribution Park woodlands comprise a complex series of (mainly) recent semi-natural woodland, situated in the edges of, and to the immediate west of, the Distribution Park grounds, Botley, South Hampshire. The woodland on the site appears to have developed around what was most probably a Second World War rail yard, and this has developed a diverse wooded cover as the site's use has changed over the last 60 years. Despite it's fairly recent origin the site is structurally diverse and supports at least 21 ancient woodland indicator species	Adjacent to southern boundary
Round Copse, West End SINC	Comprises a small and predominantly ancient semi-natural oak-hazel woodland, located against the eastern boundary of the Chalcroft Distribution Park, West End, Hampshire. The site is structurally diverse and supports at least 15 ancient woodland indicator species.	Adjacent to southern boundary
Hearts Copse, West End SINC	The wood, which lies on very gently sloping heavy clay soils, is mostly ash and hazel coppice with field maple in the eastern and western sides and patches of alder woodland on the southern, wetter ground. Most of the wood is open to grazing and it is used for pheasant rearing. Overall there is a dense cover of trees and shrubs and the ground flora is moderately herb-rich but not particularly diverse. Only 12 'ancient woodland' indicator species were recorded but the wood is identified as being ancient woodland in the County Ancient Woodland Inventory.	340m west/north west
Treeline Break SINC	Treeline Break is a narrow strip of ancient semi-natural woodland, situated in a small and quite deeply incised stream valley, on the north-western edge of the new solar farm, south of Allington Lane, Eastleigh. 18 ancient woodland indicators were recorded within this site.	400m north west
Field West of Treeline Break (Long Field) SINC	Situated on the western side of the small stream valley south of Allington Lane, West End. A distinct sandy river terrace dominates the western half of the valley, sloping down abruptly to the damp valley bottom. Supports significant areas of unimproved fen meadow, supporting species such as sneezewort <i>Achillea ptarmica</i> and brown sedge <i>Carex disticha</i> . Grassland within the site is largely unmanaged and rank.	370m north west
Quobleigh Pond and Woods SINC	The site is an area of mixed habitats located on the edge of Fair Oak. Woodland is the main habitat and the majority of the woodland is wet and much is ancient. There is a high diversity of woodland species including 31 ancient woodland indicators. There are two ponds within the site. The large pond is old but has become scrubbed over. Open areas contain improved grassland and scrub which add to the diversity of the site.	1.1km north
Fair Oak School Meadow SINC	The site is a field and woodland strip located on the outskirts of Fair Oak. The site is adjacent to Quobleigh Pond and Wood SINC. Within the field there is an excellent range of unimproved grassland communities, both dry and marshy. The sward is rather rough and scrubby in places, but despite this, there is a very good species diversity with over 100 species noted including an excellent 10 acid/neutral grassland indicators. The woodland strip along the south edge is not ancient but there is some wet woodland present. There is also a small pond on site.	1.2km north

3.1.3 Local Planning Policy

As well as national policy, there is relevant biodiversity policy contained within Hampshire Council's local planning documents

Current adopted policy for Eastleigh comprises the Eastleigh Borough Local Plan Review (2001 – 2011) (adopted in May 2006) (Council, 2006). Saved policies 22.NC, 23.NC, 25.NC and 26.NC provide protection for SSSIs, locally designated sites and the overall wildlife network; and promote biodiversity conservation overall. In particular, Policy 23.NC states that:

'Development which is likely to have a direct or indirect adverse affect on a Site of Importance for Nature Conservation (SINC) will not be permitted, unless it can be demonstrated to the satisfaction of the Borough Council that the benefits of the development clearly outweigh the need to safeguard the nature conservation value of the site. If development is to be permitted, the Council will require appropriate measures to be taken to mitigate for the adverse effects on the SINC.'

3.1.4 Biodiversity Action Plan for Eastleigh Borough Council

Eastleigh Borough Council have developed a Biodiversity Action Plan for the area for 2012-2022. This document highlights both priority biodiversity areas and links within the borough which was created from collecting information on all the priority habitats and species focusing on areas where action should be targeted first and foremost to benefit biodiversity. The following information from this document is relevant to the Site;

Eastleigh Borough Priority Habitats

All habitats which feature in the UK BAP Priority Habitats list issued by Joint Nature Conservation Committee (JNCC) are considered borough priorities for conservation action. 18 biodiversity action plan priority habitats are known to occur within Eastleigh. This includes coastal and floodplain grazing marsh, which from historic aerial imagery of the site the Site was assessed as having. The Phase 1 Habitat Survey of the Site highlighted some of these areas as marshy grassland dominated by soft rush *Juncus effusus* and Yorkshire fog *Holcus lanatus*. However, these areas of marshy grassland have never been observed inundated with water, and therefore congregations of waders and larger waterfowl are absent from site. The streams and ditches are also not rich with plant species or invertebrate assemblages.

Ecological Networks and Opportunities Mapping

Mapping has been recently produced by HBIC and shows the main habitat blocks considered to comprise the essential current components of the ecological network within Hampshire. The opportunities mapping shows the main areas of land that should be considered for biodiversity enhancement to build on and strengthen the local ecological network.

There are both current ecological network and ecological opportunities within the Site – see the plans in Appendix A. These should be seen as the critical natural capital for retention and enhancement within the Site; and development should be designed around this ecological network.

Chalcroft Priority Biodiversity Link is located within the Site boundary which has been highlighted for stream, hedgerow, grassland and wetland habitat restoration to facilitate otter movement between the river Itchen and the river Hamble catchments.

Furthermore, the wider Quobleigh Woodland area has been identified as an Eastleigh BAP 2012-22 Priority Biodiversity Area and is also designated as a Site of Important Nature Conservation (SINC). Priority Biodiversity Areas have been

chosen for holding the greatest concentration of priority habitats and species and land where there is potential to enhance and restore priority habitats. Quobleigh woodland is a large area of wet woodland to the north of the site but is in bad condition due to the increase of invasive plant species, such as Himalayan balsam *Impatiens glandulifera* and Rhododendron *Rhododendron ponticum*. In line with the local planning policy and priority biodiversity area of Quobleigh woodland SINC, habitat restoration work should be carried out as part of the development biodiversity enhancement of the area.

3.1.5 Species

Table 4 below summarises the notable species that have been recorded within 2km of the Site boundary (data obtained from HBIC).

Table 4. Protected and notable species recorded within 2km of the Site boundary

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Reas ²	SoPl ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber-listed ⁸	Local interest ⁹		
Birds												
<i>Alauda arvensis</i>	Skylark			X				X		HBAP	SU493164	9 records in total. 1 record On site on 2012
<i>Alcedo atthis</i>	Kingfisher	Schd1							X		SU470170	22 records in total. Closest record (off site), - Has been recorded on site.
<i>Ardea cinerea</i>	Grey heron									County Scarce	SU618	3 records in total. Closest record (off site) will likely be using site.
<i>Milvus Milvus</i>	Red kite	X		X						HBAP / County Rare	SU4916	47 records in total. On site

¹ Listed on Schedules 1, 5 or 8 of the Wildlife and Countryside Act (1981) (as amended)

² Listed on Schedule 2 of the Conservation of Habitats and Species Regulations (2017)

³ Listed as a Species of Principal Importance in England under s41 of the Natural Environment and Rural Communities (NERC) Act (2006)

⁴ Nationally rare: Occurring in 15 or fewer hectads in Great Britain.

⁵ Nationally scarce: Taxa which are recorded in 16-100 hectads in Great Britain.

⁶ IUCN Red List. Taxa are: CE - a taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future; E- A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild; V - A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction in the wild; NT - A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future. In Britain, this category includes species which occur in 15 or fewer hectads but do not qualify as Critically Endangered, Endangered or Vulnerable.

⁷ Bird species on the Red List of Birds of Conservation Concern [Easton, M. A., Aebischer, N. J., Brown, A. F., Hearn, R. D., Lock, L., Musgove, A. J., Noble, D. G., Stroud, D. A., and Gregory, R. D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708-746]

⁸ Bird species on the Amber List of Birds of Conservation Concern (Easton et al, 2015)

⁹ Of local interest e.g. listed in a County Red Book or as a priority species within the local Biodiversity Action Plan (BAP)

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Recs ²	SoP ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber-listed ⁸	Local interest ⁹		
<i>Motacilla cinerea</i>	Grey wagtail							X			SU4818	17 records in total. Closest DS record (off site) – Has been seen on site.
<i>Sturnus vulgaris</i>	Starling							X			SU4916	15 records in total. On site
<i>Turdus iliacus</i>	Redwing	Schd 1						X			SU4816	27 records in total. On site
<i>Turdus philomelos</i>	Song thrush							X		HBAP	SU486171	20 records in total. On site
<i>Turdus viscivorous</i>	Mistle thrush							X			SU485163	15 records in total. On site
<i>Tyto alba</i>	Barn owl	Schd 1									SU492188	12 records in total. Closest record 450m south of site – Has been recorded on site.
<i>Gallinago gallinago</i>	Snipe								X	HBAP, County scarce	SU477163	9 records in total. Closest record 450m south of site - Has been recorded on site.
<i>Linaria cannabina</i>	Linnet							X		HBAP	SU477163	5 recorded in total. Closest record 450m south of site - Has been recorded using the site
<i>Motacilla flava</i>	Yellow wagtail							X		HBAP, County rare	SU477163	16 records in total. Closest record 450m south of site. Possibility of it being present on site.
<i>Emberiza citrinella</i>	Yellowhammer			X				X			SU5016	7 records in total. Closest record 600m east of site - Likely to be present on site.
<i>Ficedula hypoleuca</i>	Pied flycatcher							X		County rare	SU477163	7 records in total. Closest record 450m south of site. Possibility of it being present on site
<i>Larus argentatus</i>	Herring gull							X		County rare	SU467182	8 records in total. Closest record 2km off site. Has been recorded on site
<i>Larus fuscus</i>	Lesser black-backed gull							X		County rare	SU477163	12 records in total. Closest record 450m south of site. Has been recorded on site.
<i>Chroicocephalus ridibundus</i>	Black-headed gull							X		Country rare	SU5016	5 records in total. Closest record 450m south of site - Has been recorded on site
<i>Regulus ignicapilla</i>	Firecrest	Schd 1								HBAP, County scarce	SU477163	41 records in total. Closest record 450m south of site – Possibility of it being present on site.

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Reas ²	SoP ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber-listed ⁸	Local interest ⁹		
<i>Emberiza schoeniclus</i>	Reed bunting			X					X	HBAP	SU477163	16 records in total. Closest record 450m south of site. Likely to be present on site.
<i>Cuculus canorus</i>	Cuckoo			X				X			SU4917	23 records in total. On site
<i>Acanthis cabaret</i>	Lesser redpoll			X				X			SU477163	14 records in total. Closest record 450m south of site – Possibility of it being present on site.
<i>Fingilla montifringilla</i>	Brambling			X							SU477163	8 records in total. Closest record 450m south of site – Possibility of it being present on site in winter.
<i>Anthus trivialis</i>	Tree pipit			X				X			SU477163	6 records in total. Closest record 450m south of site
<i>Falco columbarius</i>	Merlin	Schd 1						X		HBAP	SU477163	6 records in total. Closest record 450m south of site. Annex 1 Species on the birds directive
<i>Larus melanocephalus</i>	Mediterranean gull	Schd 1								HBAP, County rare	SU477163	20 records in total. Closest record 450m south of site – Possibility of it being present on site. Annex 1 Species on the birds directive
<i>Numenius arquata</i>	Curlew			X				X			SU4717	3 records in total. Closest record 1km west of site – Possibility of being on site.
<i>Vanellus vanellus</i>	Lapwing			X				X		HBAP	SU477163	14 records in total. Closest record 450m south of site – Possibility of being on site.
<i>Pluvialis apricaria</i>	Golden plover									HBAP	SU477163	6 records in total. Closest record 450m south of site. Possibility of being on site. Annex 1 Species on the birds directive
<i>Pheonicurus ochruros</i>	Black redstart	Schd 1						X		County rare	SU477163	5 records in total. Closest record 450m south of site.
<i>Phoenicurus phoenicurus</i>	Redstart								X	County Interest	SU477163	13 records in total. Closest record 450m south of site.
<i>Phylloscopus sibilatrix</i>	Wood warbler			X				X		County interest	SU4719	1 record in total. Closest record 2km north west of site.
<i>Saxicola rubetra</i>	Whinchat							X		HBAP, County rare	SU477163	10 records in total. Closest record 450m south of site.

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Res ²	SoP ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber-listed ⁸	Local interest ⁹		
<i>Scolopax rusticola</i>	Woodcock							X			SU477163	16 records in total. Closest record 450m south of site – Possibly using the site.
<i>Spinus spinus</i>	Siskin									County interest	SU477163	24 records in total. Closest record 450m south west of site – Likely to be on site
<i>Turdus pilaris</i>	Fieldfare			X				X			SU477163	20 records in total. Closest record 450m south of site – Likely to be using the site in winter
<i>Riparia riparia</i>	Sand martin									County scarce	SU477163	10 records in total. Closest record 450m south of site.
<i>Poecile palustris</i>	Marsh tit							X			SU501184	12 records in total. Closest record 2km north west of site – Possibility of being on site.
<i>Falco subbuteo</i>	Hobby	Schd 1								HBAP	SU41 - Sensitive	15 records in total. Possible that it is using the site.
<i>Passer domesticus</i>	House sparrow			X				X			SU4818	10 records in total. Closest record - 380m north west of site. Likely to be on site.
Reptiles/ amphibians												
<i>Anguis fragilis</i>	Slowworm	X		X							SU49601780 White Tree Farm, Fair Oak	11 records 1km NE
<i>Bufo bufo</i>	Common toad			X							SU49131799 Quobleigh Pond, Fair Oak	6 records 230m N
<i>Natrix helvetica</i>	Grass snake	X		X							SU49301910 Fair Oak	8 records 2km NE
<i>Triturus cristatus</i>	Great crested newt	X	X	X						HBAP	SU48591663 Chalcroft Farm, Horton Heath	On site; max count of 8 in 2014
<i>Triturus cristatus</i>	Great crested newt	X	X	X						HBAP	SU48881711 Fir Tree lane, Horton Heath	On site; max count of 8 in 2014
<i>Triturus cristatus</i>	Great crested newt	X	X	X						HBAP	SU48881795 Quobleigh Pond, Fair Oak	7 records in Total

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Res ²	SoP ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber-listed ⁸	Local interest ⁹		
<i>Zootoca vivipara</i>	Common lizard	X		X							SU491179 Ouobleigh pond, Fair Oak	3 records 230m N
Mammals												
<i>Apodemus flavicollis</i>	Yellow-necked mouse									HBAP	SU461158 Itchen Valley County Park	2 records 2km SE
<i>Arvicola amphibius</i>	European water vole	X		X						HBAP CI	SU467190 Bishopstoke	2 records 2.9km North-west
<i>Erinaceus europaeus</i>	West European hedgehog			X							SU49571679 Horton Heath	15 records Recorded on Site
<i>Lutra lutra</i>	European otter	X	X	X						HBAP	SU471185 Bishopstoke	5 records 1.6km NE GR Blurred
<i>Meles Meles</i>	Eurasian badger										SU507171	15 records GR Blurred
<i>Muscardinus avellanarius</i>	Hazel dormouse	X	X							HBAP CI	SU508172	1 record 1.5km North- east GR Blurred
<i>Neomys fodiens</i>	Eurasian water shrew									HBAP CS	SU461158 Eastleigh	1 record 2.8km South-west
Bats												
<i>Eptesicus serotinus</i>	Serotine	X	X							HBAP	SU496178 Horton Heath	10 records 340m NE
<i>Myotis brandtii</i>	Brandt's bat	X	X								SU478193 Stoke Park Wood, Eastleigh	1 record 1.9km NE
<i>Myotis daubentonii</i>	Daubenton's bat	X	X								SU485464 Eastleigh	5 records Recorded on Site
<i>Myotis mystacinus</i>	Whiskered Bat	X	X								SU468166 Eastleigh	4 records 1.1km W
<i>Myotis nattereri</i>	Natterer's	X	X								SU486197 Fair Oak	11 records 1.9km N
<i>Nyctalus noctula</i>	Noctule	X	X	X							SU491172 Fir Tree Lane	21 records On site

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Recs ²	SoP1 ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber-listed ⁸	Local interest ⁹		
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	X	X							HBAP	SU491172 Fir Tree Lane	52 records On site
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	X	X	X							SU491172 Fir Tree Lane	43 records On site
<i>Plecotus auritus</i>	Brown long-eared	X	X	X							SU496178 Fair Oak/Horton Heath	32 records 440m NE
Plants												
<i>Anthemis cotula</i>	Stinking chamomile						VU			CI	SU4816 Horton Heath	1 records Reduced grid reference
<i>Buxus sempervirens</i>	Box				X						SU4916 Horth Heath	1 records Reduced Grid reference
<i>Chenopodium glaucum</i>	Oak-leaved goosefoot					X	VU			nHR, sHS	SU494159 Horton Heath	2 records 210m east
<i>Dryopteris carthusiana x dilatata</i> = <i>D. x deweveri</i>	Buckler fern									CS, nHR, sHR	SU4919	1 records Reduced grid reference.
<i>Fumaria capreolata</i>	White ramping-fumitory									CR sHR	SU500191 Hall Lands house	1 records 1.6km N
<i>Gnaphalium luteoalbum</i>	Jersey cudweed	X								CI	SU473186 South of Bishopstoke	1 records 1.3km N
<i>Myosurus minimus</i>	Mousetail						VU			CS	SU491163	1 record (51 historic records over 18 years old.) Onsite, Chalcroft Farm
<i>Spirodela polyrhiza</i>	Greater duckweed									CS, nHR, sHS	SU492191 Fair Oak	2 Records 1.3km N
Invertebrates												
<i>Coleoptera</i>												
<i>Agelastica alni</i>	Alder leaf beetle			X			X				SU494169 Horton Heath	17 records 206m E

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Reas ²	SOP ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber-listed ⁸	Local interest ⁹		
<i>Anobium inexpectatum</i>	A beetle					X					SU4915 Hedge End	1 records 1.2km SE
<i>Chaetocnema subcoerulea</i>	A beetle					X					SU4915 Hedge End	1 records 1.2km SE
<i>Elodes minuta</i>	A beetle					X					SU4915 Hedge End	2 records 1.2km SE
<i>Oedemera (Oncomera) femoralis</i>	A beetle					X					SU4917 Horton Heath	1 records On site
Invertebrates		Hymenoptera										
<i>Macropis europaea</i>	Yellow loosestrife bee					X					SU494169 Horton Heath	2 records 206m E
Invertebrates		Lepidoptera										
<i>Acronicta psi</i>	Grey dagger			X							SU499192	1 records 1.6km NE
<i>Acronicta rumicus</i>	Knot grass			X							SU495173 Horton Heath	3 records 340m E
<i>Agrochola lychnidis</i>	Beaded chestnut			X							SU495173 Horton Heath	1 records 340m E
<i>Amphipyra tragopoginis</i>	Mouse moth			X							SU495173 Horton Heath	1 records 340m E
<i>Apamea remissa</i>	Dusky brocade			X							SU495173 Horton Heath	1 records 340m E
<i>Apatura iris</i>	Purple emperor						X			HBAP	SU46081610	2 records 1.6km NE
<i>Apoda limacodes</i>	Festoon									HBAP	SU495173 Horton Heath	2 records 340m E
<i>Arctia caja</i>	Garden tiger			X							SU495173 Horton Heath	1 records 340m E
<i>Asteroscopus sphinx</i>	Sprawler			X							SU494148 Eastleigh	1 records 900m S
<i>Atethmia centrago</i>	Centre-barred sallow			X							SU495173 Horton Heath	2 records 340m E
<i>Boloria euphrosyne</i>	Pearl-bordered fritillary			X			X			HBAP County Scarce	SU469165 Itchen Valley County Park	1 records 1.1km S

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Reas ²	SoP ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber- listed ⁸	Local interest ⁹		
<i>Calamotropha paludella</i>	Bulrush veneer					X					SU495173 Horton Heath	1 records 340m E
<i>Caradrina morpheus</i>	Mottled rustic			X							SU495173 Horton Heath	2 records 340m E
<i>Cirrhia icteritia</i>	Sallow			X							SU495173 Horton Heath	3 records 340m E
<i>Coenonympha pamphilus</i>	Small heath			X			X				SU5116 Durley	4 records 1.6km E
<i>Cyclophora pendularia</i>	Dingy mocha			X			X			HBAP County Scarce	SU495173 Horton Heath	1 records 340m E
<i>Diarsia rubi</i>	Small square-spot			X							SU495173 Horton Heath	2 records 340m E
<i>Diloba caeruleocephala</i>	Figure of eight			X							SU495173 Horton Heath	1 records 340m E
<i>Ecliptopera silaceata</i>	Small phoenix			X							SU495173 Horton Heath	4 records 340m E
<i>Elegia similella</i>	White-barred knot-horn			X		X					SU495173 Horton Heath	2 records 340m E
<i>Ennomos erosaria</i>	September thorn			X							SU495173 Horton Heath	4 records 340m E
<i>Ennomos fuscantaria</i>	Dusky thorn			X							SU495173 Horton Heath	2 records 340m E
<i>Ennomos quercinaria</i>	August thorn			X							SU495173 Horton Heath	3 records 340m E
<i>Eulithis mellinata</i>	Spinach			X							SU494148 Eastleigh	1 records 1.3km SE
<i>Hemistola chrysoprasaria</i>	Small emerald			X							SU495173 Horton Heath	1 records 340m E
<i>Hepialus humuli</i>	Ghost moth			X							SU495173 Horton Heath	1 records 340m E
<i>Hoplodrina blanda</i>	Rustic			X							SU495173 Horton Heath	4 records 340m E
<i>Hydraecia micacea</i>	Rosy rustic			X							SU495173 Horton Heath	2 records 340m E

Latin name	Common name	Status									Location	Number of records between 2010 – 2020 & distance from site
		WCA ¹	Habs Reas ²	SoP ³	NR ⁴	NS ⁵	IUCN list ⁶	Red-listed ⁷	Amber-listed ⁸	Local interest ⁹		
<i>Leucania comma</i>	Shoulder-striped wainscot			X							SU495173 Horton Heath	2 records 340m E
<i>Limenitis camilla</i>	White admiral			X			X				SU493149 Eastleigh	27 records 1.3km SE
<i>Lycia hirtaria</i>	Brindled beauty			X							SU495173 Horton Heath	2 records 340m E
<i>Melanchra persicariae</i>	Dot moth			X							SU495173 Horton Heath	5 records 340m E
<i>Nephopterix angustella</i>	Spindle knot-horn					X					SU495173 Horton Heath	1 records 340m E
<i>Orthosia gracilis</i>	Powdered quaker			X							SU495173 Horton Heath	2 records 340m E
<i>Rhizedra lutosa</i>	Large wainscot			X							SU495173 Horton Heath	1 records 340m E
<i>Schrankia taenialis</i>	White-line snout									HBAP	SU485196 Bishopstoke	1 records 1.8km N
<i>Scopula marginepunctata</i>	Mullein wave			X							SU495173 Horton Heath	1 records 340m E
<i>Scotopteryx chenopodiata</i>	Shaded broad-bar			X							SU495173 Horton Heath	3 records 340m E
<i>Spilosoma lubricipeda</i>	White ermine			X							SU495173 Horton Heath	3 records 340m E
<i>Spilosoma lutea</i>	Buff ermine			X							SU495173 Horton Heath	5 records 340m E
<i>Timandra comae</i>	Blood-vein			X							SU495173 Horton Heath	3 records 340m E
<i>Tyria jacobaeae</i>	Cinnabar			X							SU495173 Horton Heath	2 records 340m E
<i>Watsonalla binaria</i>	Oak hook-tip			X							SU495173 Horton Heath	3 records 340m E
<i>Xanthorhoe biriviata</i>	Balsam carpet						X			HBAP	SU495173 Horton Heath	2 records 340m E
<i>Xanthorhoe ferrugata</i>	Dark-barred twin-spot carpet			X							SU495173 Horton Heath	1 records 340m E

3.2 HISTORIC ECOLOGICAL SURVEYS

Table 5 below summarises the results of the ecological surveys undertaken during the period 2014 to 2016 to support planning applications O/14/75735 (West Horton Heath) and O/16/79364 (North West Horton Heath). Figures 2 to 8 below variously show the areas covered by different survey techniques and key survey results.

Table 5. Summary of historic ecology surveys undertaken on the site

	O/14/75735 (WHH)		O/16/79354 (NWHH)	
Survey type	Summary of surveys undertaken and methodology	Headline survey results	Summary of surveys undertaken and methodology	Headline survey results
Habitat survey (Extended Phase I)	Undertaken in July 2013 and updated in September 2014. Covers WHH area	Identified stream corridors, woodland and hedgerows as being valuable habitats	Covers NWHH area. Undertaken in April 2015 (small additional area covered in April 2016)	Identified stream corridors, woodland and hedgerows as being valuable habitats
Invasive plants	Covered by the Phase I habitat survey described above	Small stand of Japanese knotweed associated with WHH area (Chalcroft Farm pond).	Himalayan balsam survey undertaken in August 2015 covering the NWHH area	Himalayan balsam associated with Quobleigh woods and streams.
Botanical survey	Focused on less intensively managed areas (typically floodplain areas – see Figure 2). Comprised a walkover survey. Undertaken in June and August 2014 No detailed results provided in WHH report (no species mentioned or NVC types)	Several areas were found to retain a moderately species rich flora, particularly where the historical improvement has removed some broadleaved plants, but native grasses, rushes and sedges still remain. The better quality vegetation occurs on areas liable to winter flooding, next to the various watercourses.	None	N/A
Hedgerow survey	Hedgerow Regulations Surveys undertaken in June 2014, covering WHH site. No detailed descriptions of individual hedges were	Of the 53 hedgerows surveyed, 19 were defined as being potentially “Important” under the Hedgerow Regulations, with a combined length of 5,230m and comprising 44% of the total length. The remaining 34 hedgerows, with a	Hedgerow Regulations Surveys, April 2015 and April 2016 No detailed descriptions of individual hedges were available.	Of the 14 hedgerows, nine were assessed as being potentially “Important” under The Hedgerow Regulations 1997, with a combined length of 2,552 and comprising 81% of the total hedgerow length (see Figure 4).

	O/14/75735 (WHH)		O/16/79354 (NWHH)	
Survey type	Summary of surveys undertaken and methodology	Headline survey results	Summary of surveys undertaken and methodology	Headline survey results
	available.	combined length of 6,630m and comprising 56% of the total length, were defined as not being potentially "Important" (see Figure 3)		
Badger	Conducted in March, May and June 2014 with additional checks of abandoned setts in October 2014. Covers WHH area	Several abandoned setts and low level use of site by badgers,	Conducted in April, May, June 2015 Covers NWHH area	One active sett only (in woodland adjacent to NE NWHH boundary) with 5 entrances. Several abandoned setts and low level use of site by badgers.
Bat – tree surveys	Not undertaken	N/A	Ground inspection of trees within NWHH area to assess potential as bat roosts in April 2015 and April 2016	53 trees assessed as having potential to support roosting bats associated with NWHH
Bat – building surveys	Assessment of all farm buildings for potential to support roosting bats Bat emergence surveys of buildings (May to August 2014). Number of surveyors for emergence surveys not clear	Brown long-eared bat maternity and common pipistrelle roost in roof of Pond Cottages (Bldg A9) and common pipistrelle roost in old barn (Bldg A7) No bat roosts recorded at Foxholes Farm	Surveys of Fir Tree Farm, Fir Tree Farmhouse, Ardani House Three emergence/ re-entry surveys of the buildings undertaken. Number of surveyors for emergence surveys not clear	Long eared maternity roost associated with Fir Tree Farmhouse. Long-eared bat roosts associated with Fir Tree Farm (Bldg 29) and Ardani House (Bldg 25) (type not confirmed). Summer common pipistrelle roost associated with Fir Tree Farm (Bldg 29)

	O/14/75735 (WHH)		O/16/79354 (NWHH)	
Survey type	Summary of surveys undertaken and methodology	Headline survey results	Summary of surveys undertaken and methodology	Headline survey results
Bat – activity transects	Two bat activity transects (undertaken May to Sept; 18 transects walked in total [9 of each?]) No mention of static detectors – it is assumed these were not deployed	No Annex II species recorded. Noctule, Serotine, Myotis, LEB, P45, P55. The majority of call registrations were pipistrelle. The highest number of call registrations for LEB were along the trackway and hedges running east of Chalcroft Farm. The woodland edge and watercourse on the western site boundary and watercourses north and west of the solar farm support the highest bat activity and the highest species diversity.	Two bat activity transects covered 5 times May to September No mention of static detectors – it is assumed these were not deployed	No Annex II species recorded. Noctule, Serotine, Myotis, LEB, P45, P55. The results of the activity transect surveys identified an overall low-level of bat activity across the site. The areas with most activity recorded were along the boundary edges of Quobleigh woods, and directly south of Quobleigh woods along the stream/wetland area. The vast majority of registrations across the site were of both Common and Soprano pipistrelle bats.
Great crested newt	HSI followed by 6 x surveys of 3 ponds in 2014: at Chalcroft Farm, pond near Foxholes Farm, and Hearts Copse	Medium-sized population in Chalcroft Pond. Pond A supports an isolated population (see Figure 5).	Covered Quobleigh Ponds (7 ponds in total, all associated with Quobleigh Woodlands) 6 x surveys, April to June 2015	Ponds I-K & E each support small populations of GCN (a combined 'medium' population) (see Figure 5)
Water vole	Monthly between March 2014 and June 2014. Covered watercourses on WHH site, extending 250m downstream on the western watercourse Additional visits to check on southern	Evidence of water vole was found on western boundary watercourse, and central watercourse (see Figure 6)	Quobleigh stream and the margins of the pond in the woodland block were surveyed. In addition, the western boundary stream and the E-W watercourse, south of Fir Tree Lane, were also surveyed. The survey extended 250m upstream on all three watercourses, and	No evidence of water vole was found. Evidence of mink found during the survey.

	O/14/75735 (WHH)		O/16/79354 (NWHH)	
Survey type	Summary of surveys undertaken and methodology	Headline survey results	Summary of surveys undertaken and methodology	Headline survey results
	watercourse in Dec 2013 and Feb 2014		250m downstream from the western boundary Surveys conducted between April and June 2015	
Otter	Monthly between March 2014 and June 2014 Covered watercourses on WHH site, extending 250m downstream on the western watercourse Additional visits to check on southern watercourse in Dec 2013 and Feb 2014	No evidence of otter on-site (but fresh prints recorded just off-site)	The east-west watercourse on the site, north of Fir Tree Lane, and the margins of the pond in the woodland block were surveyed. In addition, the south-western boundary and the southern boundary watercourses, south of Fir Tree lane were surveyed. The survey extended 250m upstream on all three watercourses, and 250m downstream from the western boundary Surveys conducted between April and June 2015	No evidence of otter was found. Evidence of mink found during the survey.
Breeding bird	3 monthly surveys from April 2014 to June 2014	Common breeding bird assemblage. No evidence of barn owl associated with farm buildings	3 monthly surveys from April 2015 to June 2015	Common breeding bird assemblage. No evidence of barn owl associated with farm buildings
Wintering Bird	7 monthly surveys running from Sept 2013 to March 2014 (based on WeBS method with supplementary techniques relevant to farmland and woodland)	Typical common wintering bird assemblage (redwing, starling, house sparrow, dunnock, song thrush)	7 monthly surveys running from Sept 2015 to March 2016 (based on WeBS method with supplementary techniques relevant to farmland and woodland)	Typical common wintering bird assemblage (redwing, starling, house sparrow, dunnock, song thrush)

	O/14/75735 (WHH)		O/16/79354 (NWHH)	
Survey type	Summary of surveys undertaken and methodology	Headline survey results	Summary of surveys undertaken and methodology	Headline survey results
Reptiles	22 survey visits April to October 2014 (more effort deployed in spring and autumn)	Low numbers of common lizard and slow worm mainly associated with boundary habitats – see Figure 7	11 survey visits April to October 2015	Low numbers of common lizard and slow worm mainly associated with boundary habitats – see Figure 7
Invertebrates	Covered an area in the SW of the site (SI and marshy grassland, watercourse, hedgerow, woodland, scrub). 5 visits June to Sept 2014; sweep netting	The survey recorded a total of 80 species, of seven orders. Two species were listed as NERC & UK BAP Priority Species: cinnabar moth <i>Tyria jacobaeae</i> , and knot grass moth <i>Acrionicta rumicis</i> . In addition, four species were listed as “Nationally Notable”: <i>Macropis europaea</i> (yellow loosestrife bee); and three hoverflies: <i>Pipiza lugubris</i> , <i>Volucella inanis</i> and <i>Volucella zonaria</i> .	None undertaken	N/A
Dormouse	Nest tube survey. Tubes deployed in April 2014 and checked every month until Sept 2014	No dormouse recorded – likely to be absent from the site	232 nest tubes deployed in April 2015 across whole NWHH site. Tubes were checked monthly May to September	No dormouse recorded – likely to be absent from the site



Figure 1. Detailed botanical survey coverage, 2014

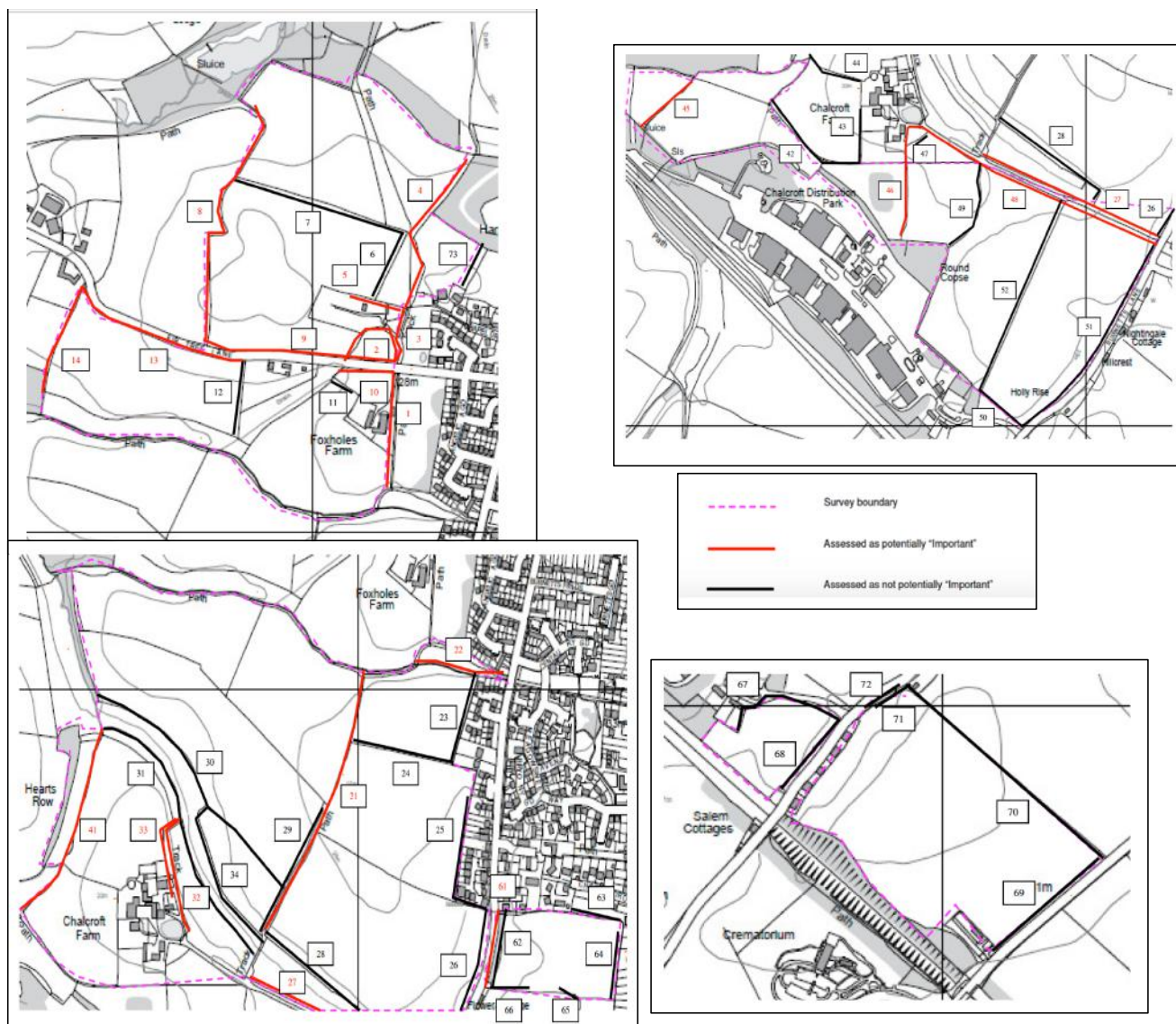


Figure 2. Results of WHH hedgerow surveys 2014

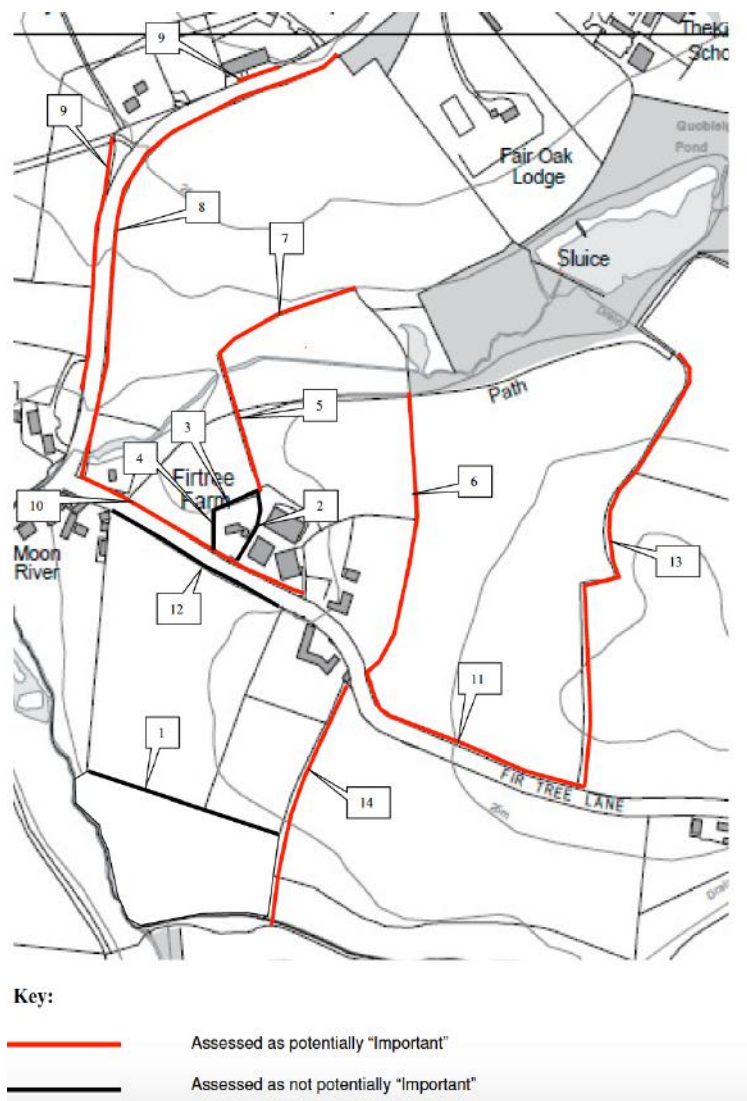


Figure 3. Results of NWHH hedgerow surveys 2015-2016

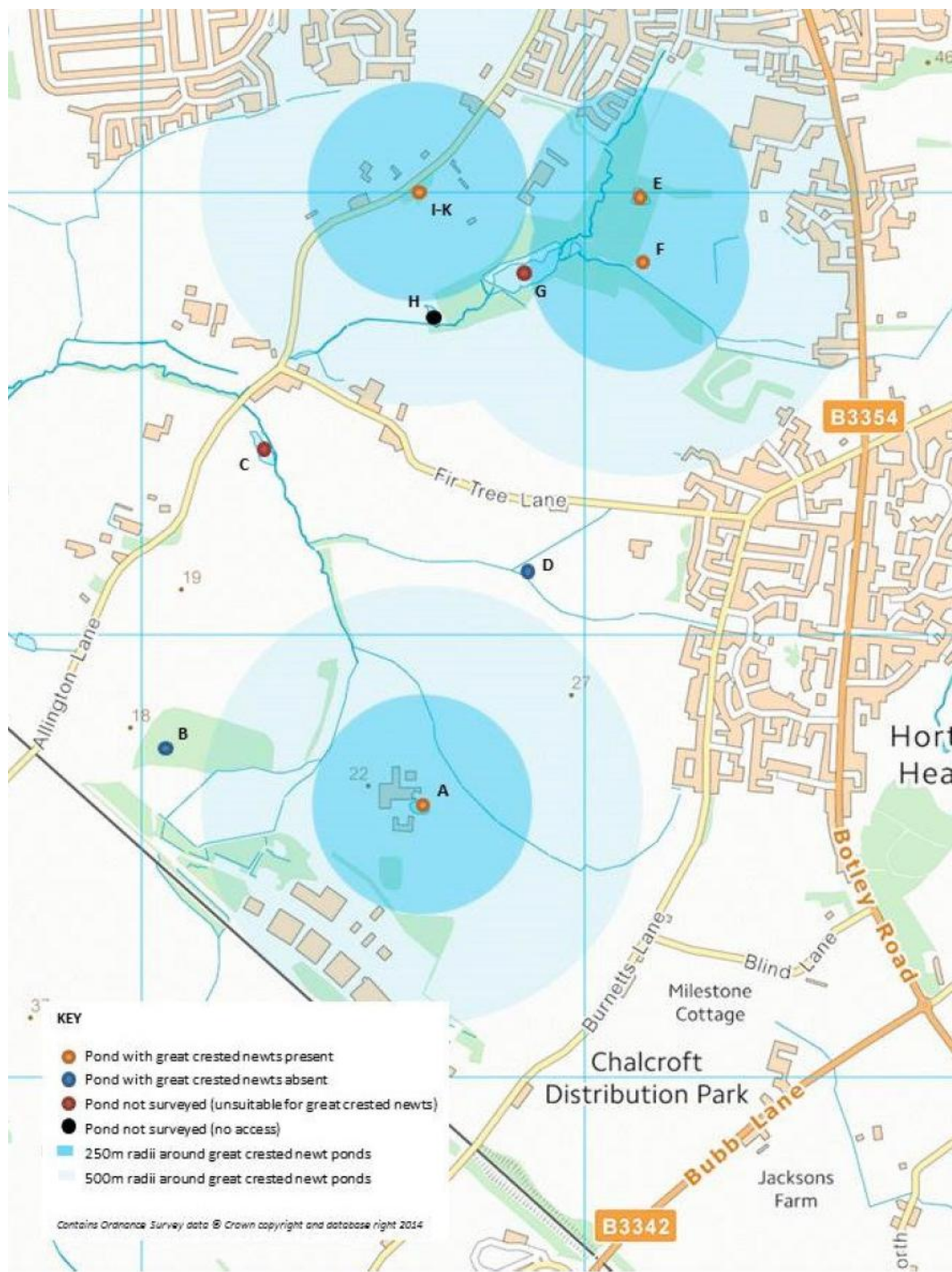


Figure 4. Great crested newt breeding ponds, surveys 2014-2016

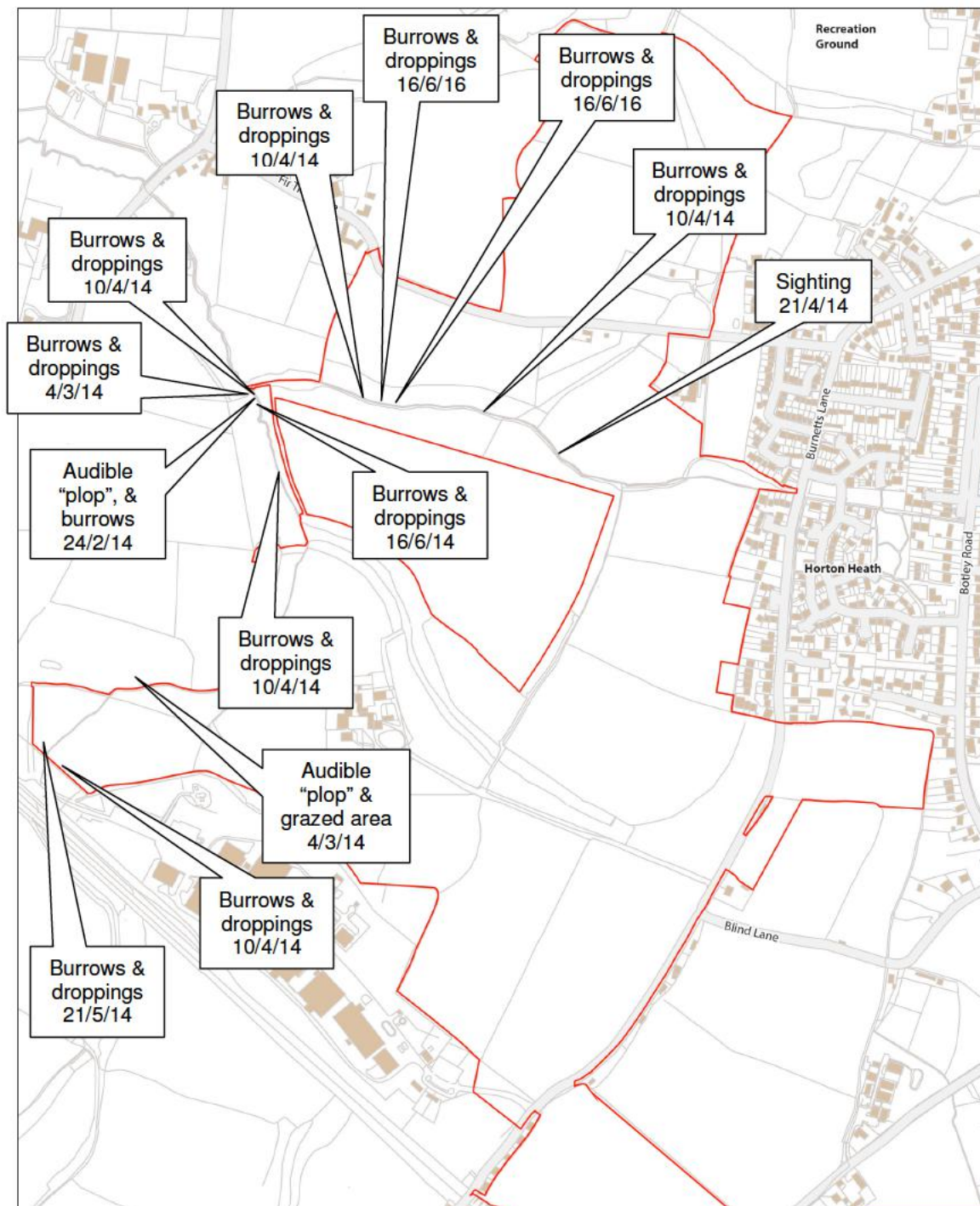


Figure 5. Water vole survey results, 2014

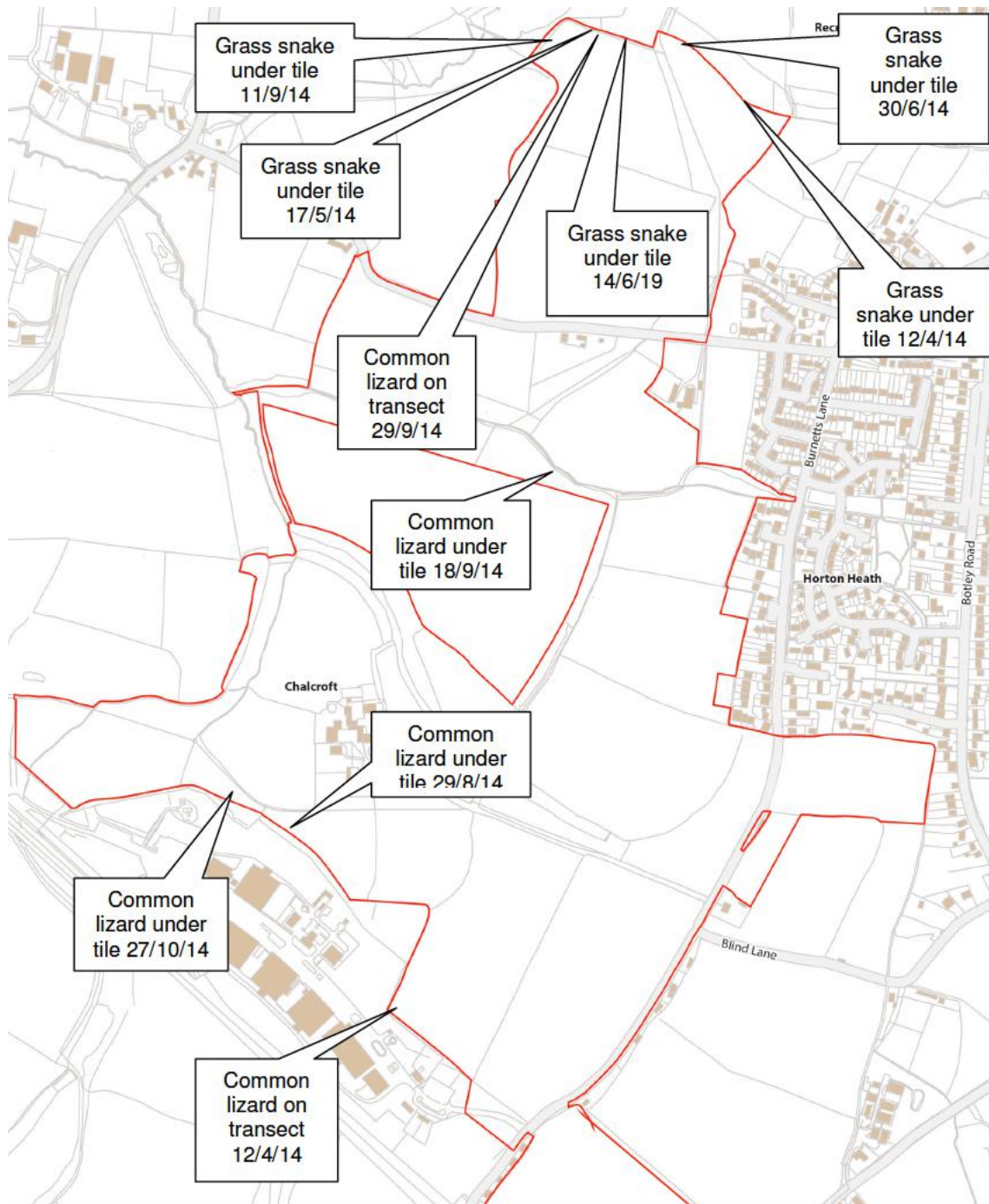


Figure 6. Reptile survey results 2014

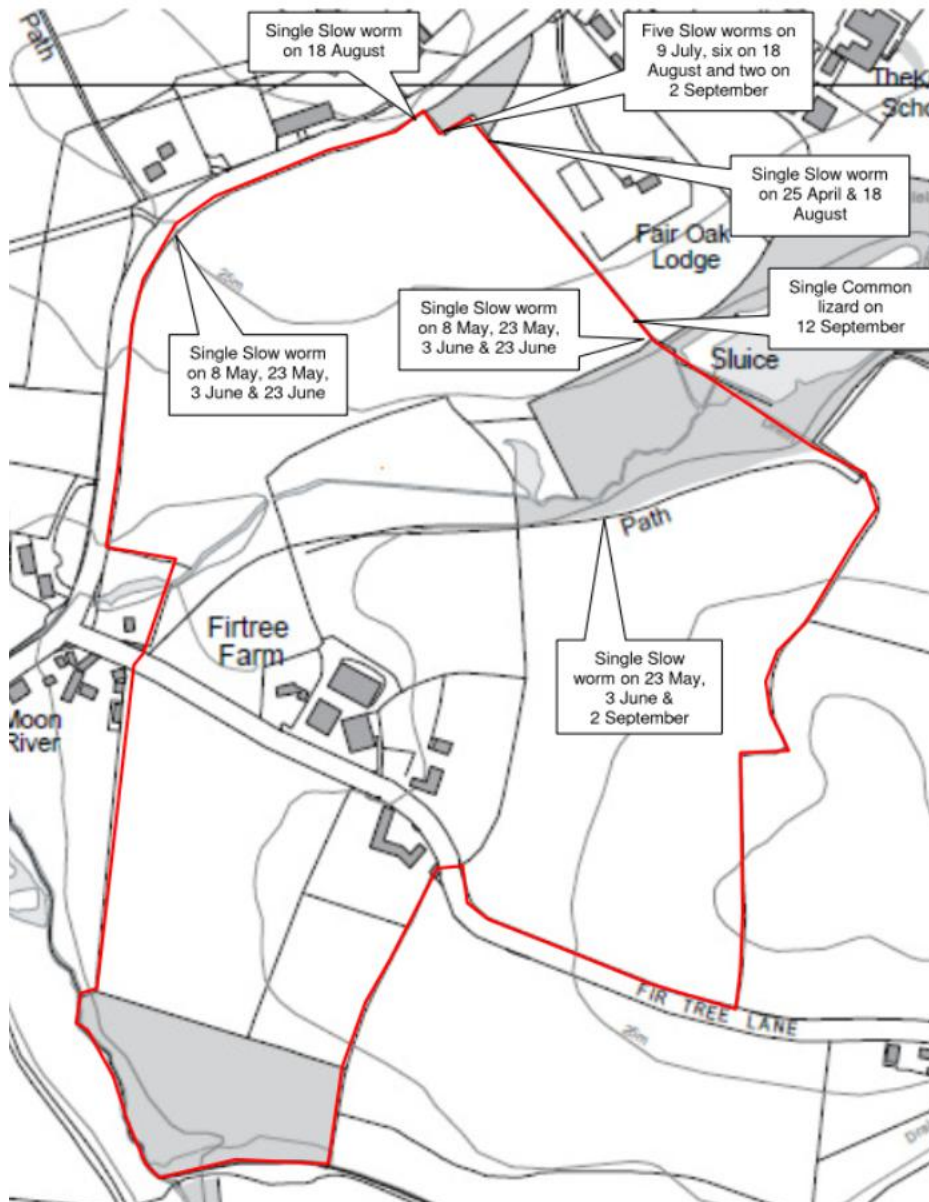
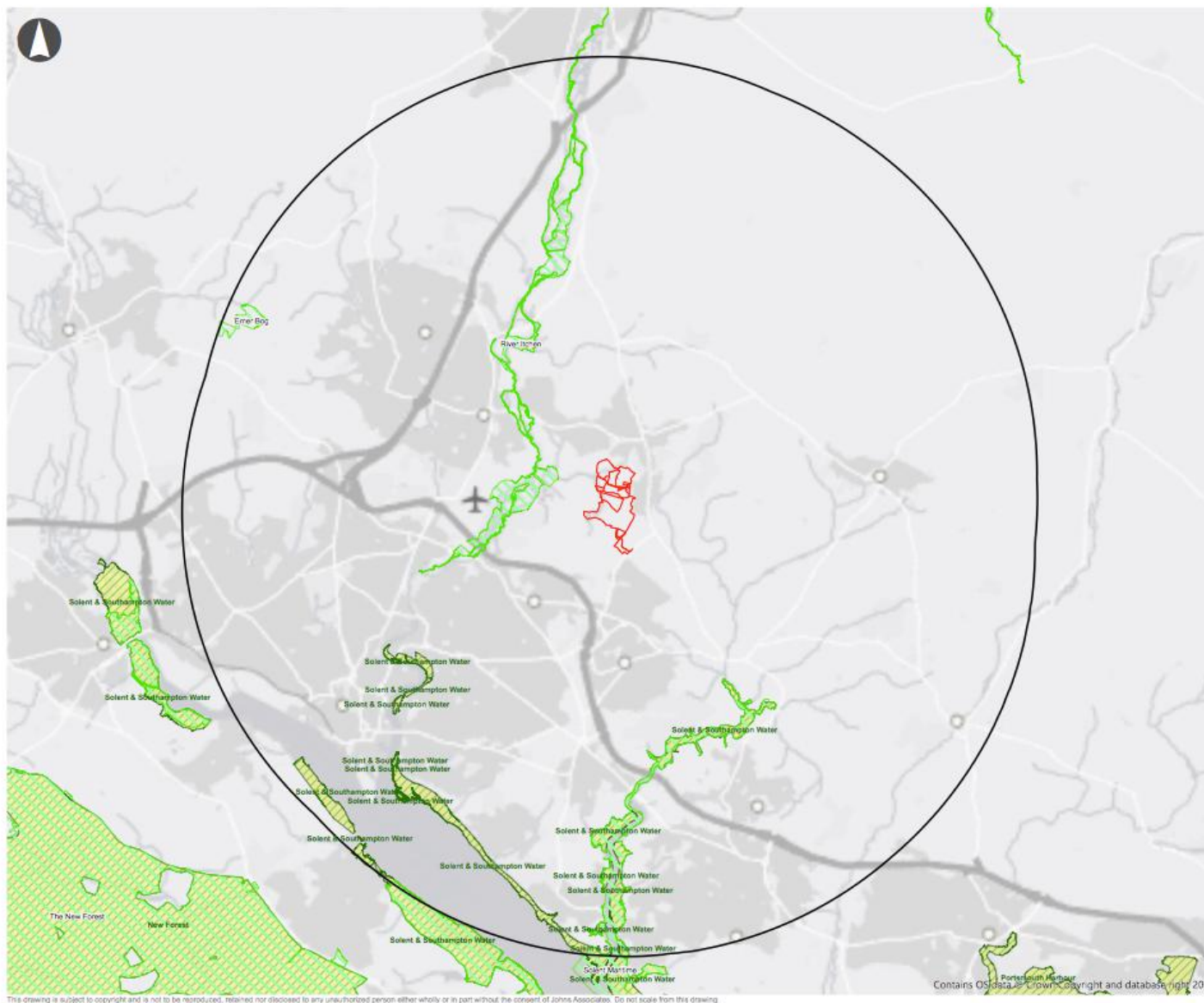


Figure 7. Reptile survey results 2015

APPENDIX A DESIGNATED SITES



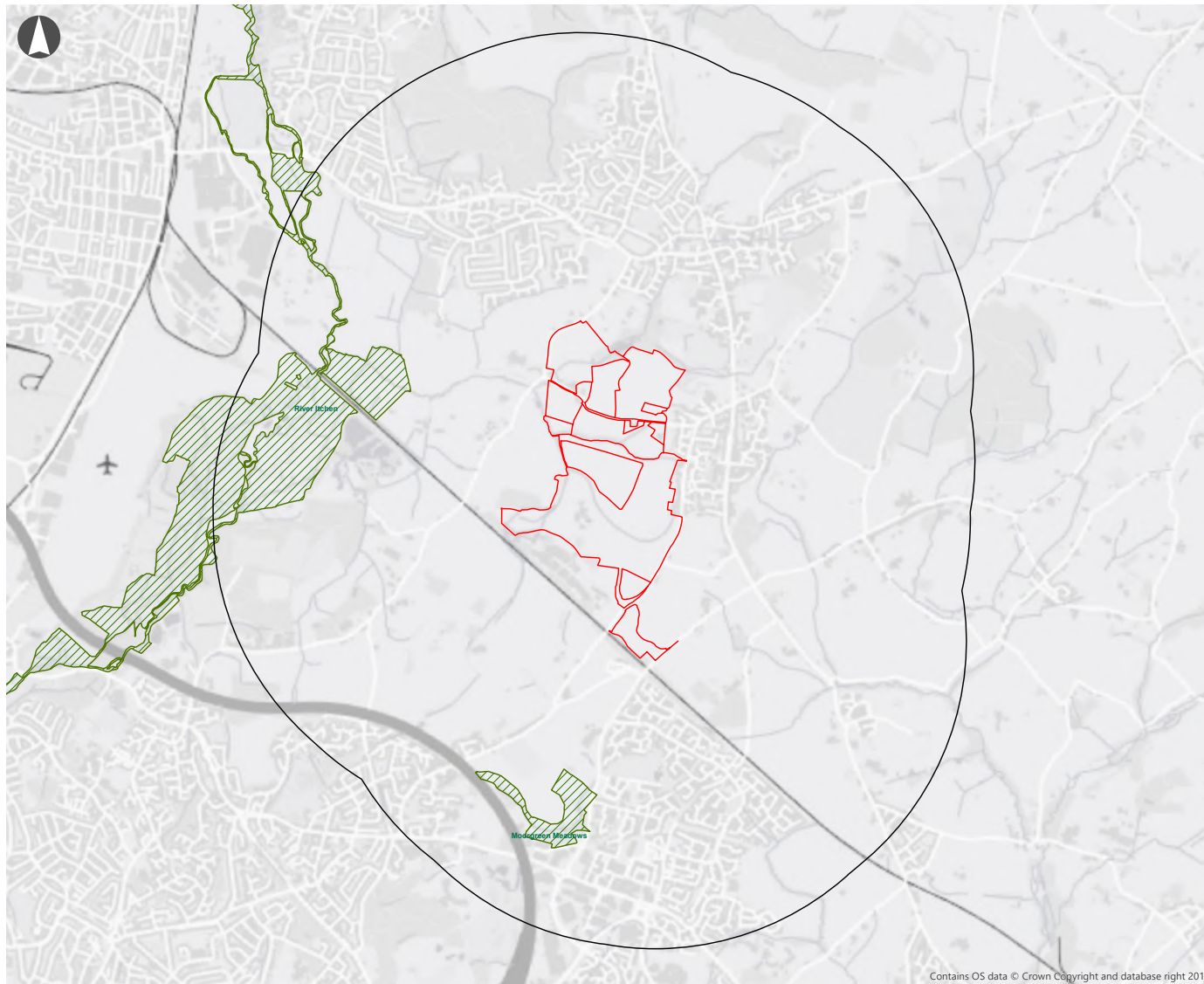
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Galiford Try Partnerships

PROJECT
Horton Heath

TITLE
Statutory Designated Sites within 10km (SPAs, SACs, Ramsar)

SCALE @ A3	CREATED BY	CHECKED BY
1:50,000	JS	JB
REFERENCE	REVISION	DATE ISSUED
J00313.S010		5/12/2018

10km Buffer
 Special Area of Conservation
 Special Protection Area
 Ramsar Site
 Site Boundary



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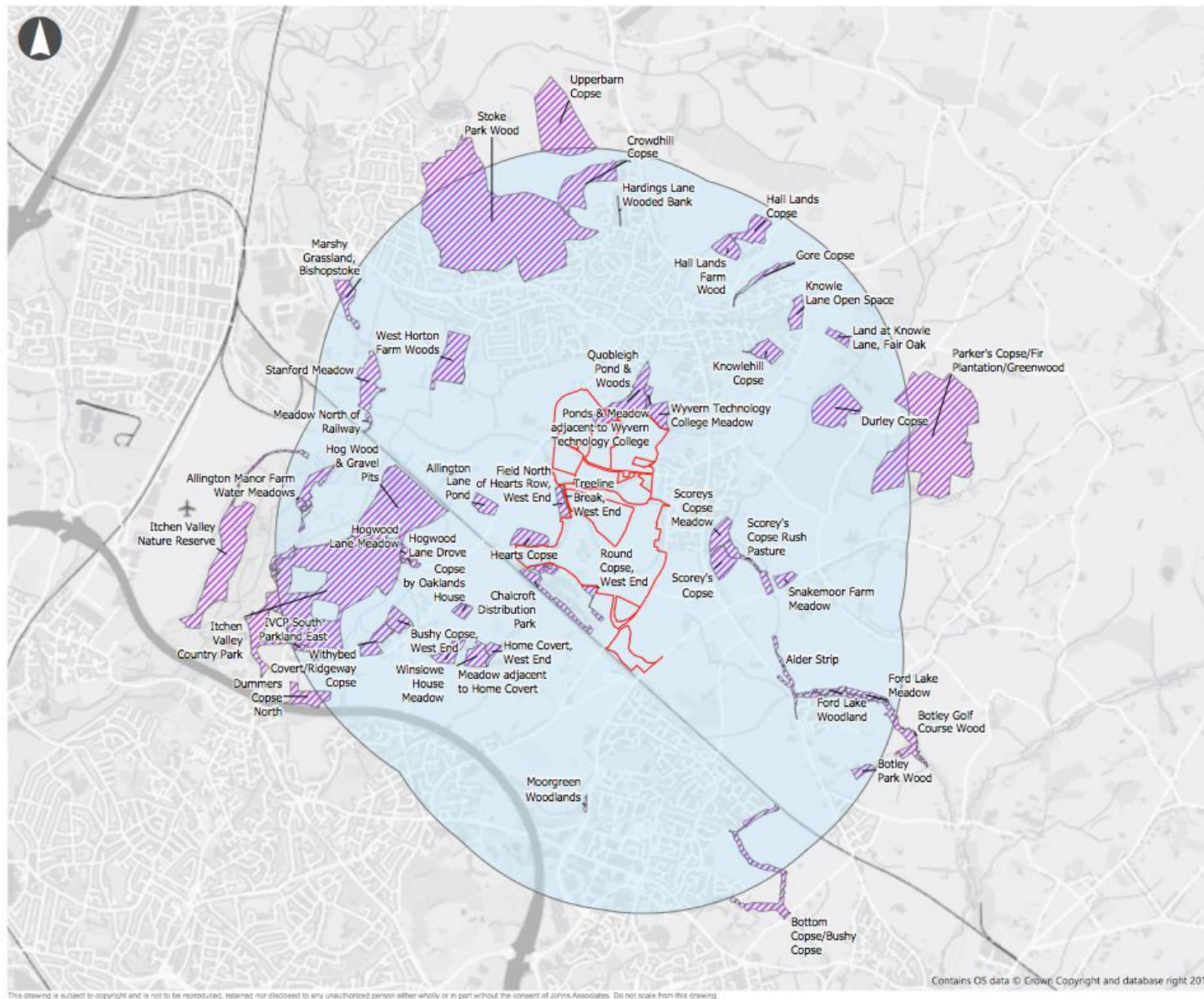
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CLIENT		
Galiford Try Partnerships		
PROJECT		
Horton Heath		
TITLE		
Statutory Designated Sites within 2km (SSSIs)		
SCALE @ A3	CREATED BY	CHECKED BY
1:25,000	JS	JB
REFERENCE	REVISION	DATE ISSUED
J00313.SD2		5/12/2018

-  Site of Special Scientific Interest
-  Site Boundary
-  Buffer 2km



CLIENT		
Galiford Try Partnerships		
PROJECT		
Horton Heath		
TITLE		
Sites of Importance for Nature Conservation within 2km of Site Boundary		
SCALE @ A3	CREATED BY	CHECKED BY
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REFERENCE	REVISION	DATE ISSUED
J00313.SI		5/12/2018

- SINCs
- SiteBoundary
- Buffer2km