

# **Water Vole Survey Report**

Daking Brook, Cannon Hall

Plinke Landscape Ltd

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**ACCESS  
Ecology**

## QUALITY ASSURANCE

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CLIENT	COMMISSION DATE
Plinke Landscape Ltd	16 <sup>th</sup> August 2017

	NAME	QUALIFICATIONS	POSITION	DATE
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## A INTRODUCTION

1. Access Ecology Ltd was commissioned by Plinke Landscape Ltd on 16<sup>th</sup> August 2017 to undertake a water vole survey at the lakes on Daking Brook at Cannon Hall Park. The survey was carried out by Belinda Wiggs BA Hons, Senior Ecologist MCIEEM and Aran Leaf Ecologist BSc Hons grad CIEEM. The report was written by Belinda Wiggs.
2. A water vole survey was requested to ascertain the potential presence/absence of water voles *Arvicola amphibious* within the water bodies, prior to the proposed dredging works in 2018 as presence of water voles along the water course would require avoidance measures or mitigation to enable to works to proceed.
3. The ecological survey works were carried out at the location listed within Table 1. The broad location of the site is included in APPENDIX A.1.

**Table 1. Site Location Details**

SITE ADDRESS	GRID REFERENCE (SITE CENTROID)
Daking Brook, Cannon Hall Park, Cawthorne, Barnsley S75 4AT	SE 2729 0788 to SE 2796 0821

4. The principal objective of this ecological assessment was to determine the presence or absence of water voles within the site and to assess the banks of the water body for their potential to provide suitable habitat for water voles. Where the length of water body to be surveyed is longer than 50m it is normal practice to survey 500m upstream and downstream of the site, however this was not possible in this case and just the water body on-site was surveyed.
5. This report has been designed to comply with standard reporting guidelines provided within both the *British Standard Biodiversity – Code of practice for planning and development – BS 42020:2013* (BSI, 2013) and the *Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Report Writing* (CIEEM, 2015).

### A.1 Background to Survey

6. Cannon Hall is a stately home with associated parkland grounds which is open to the public throughout the year.
7. The Daking Brook flows west to east across the southern part of the site, the banks of which are vegetated by tall ruderals, wetland plants, scrub and trees. Three weirs or cascades have been installed along the Daking Brook creating three ponds along the water course. The water vole survey was carried out in The Top Pond (grid reference SE27372 07896) The Middle Pond (SE27653 07977) and The Bottom Pond (SE27812 08128).
8. The survey was commissioned to inform the proposal to carry out dredging works on the lakes. The Cannon Hall Lakes Restoration - HCP/GS/KLT/CP/08/18 report outlines the plans for restoration dredging works to the Daking Brook.

9. Access Ecology Ltd has been provided with the plans and background information as shown within Table 2.

**Table 2. Pre-existing information**

<b>TYPE</b>	<b>ITEM TITLE / REFERENCE</b>	<b>DATE ISSUED / PUBLISHED</b>
Report	Cannon Hall Lakes Restoration - HCP/GS/KLT/CP/08/18	10 <sup>th</sup> March 2010
Report	CANNON HALL PARK – CONSERVATION ARCHITECT REPORT	21 <sup>st</sup> July 2015
Map	Ordnance Survey mapping with the permission of Her Majesty's Stationery Office. - Licence number 100022264 (2006)	27 <sup>th</sup> Feb 2013
Map	Cannon Hall Field map	10 <sup>th</sup> July 2015
Map	141113_110bCannon Hall Master plan	Feb 2015

## **A.2 Survey Validity**

10. The results of this report are considered to be valid for up to two years of the date of publication: November 2017.

## **B PLANNING POLICY AND LEGISLATION**

11. This legal information is presented in summary form and is intended for general guidance only. It is recommended the original documentation is referred to for detailed and definitive information. Web addresses are located in section F.1.

### **Water Vole Legislation**

12. Water voles are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to kill, injure or take any water vole, damage destroy or obstruct access to any place of shelter or protection that the animals are using, or disturb voles while they are using such a place.
13. In addition water vole is a UK Biodiversity Action Plan species and is also listed as a Species of Principal Importance and states that Local Authorities should ensure that they are protected from the adverse effects of development. Where appropriate, by using the planning conditions or obligations.

### **Habitat Regulations**

14. The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is absent at the time).

### **Wildlife & Countryside Act 1981**

15. The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006 (which also places a duty on authorities to have due regard for biodiversity and nature conservation) consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:
- Intentionally kill or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
  - Intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
  - Pick or uproot any wild plant listed under Schedule 8 of the Act.
  - Plant or otherwise cause any species listed in part 2 of Schedule 9 (Which includes Japanese Knotweed) to grow in the wild.

### **National Planning Policy Framework**

16. The NPPF outlines government planning policies and how they should be applied within local authorities. The framework places an emphasis on sustainable development, encouraging the re-use of land that has previously been developed over using land that has a higher environmental value and by minimising impacts on biodiversity. The NPPF states that developments should aim to conserve or enhance biodiversity and encourages opportunities to incorporate biodiversity in and around developments.

#### **Biodiversity Action Plans**

17. The original objective of the UK Biodiversity Action Plan (UKBAP) was to fulfil the requirements of the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with specific action plans defining the measures consider necessary to ensure their conservation. Regional and local BAPs have also been developed for species/habitats of nature conservation importance both regionally and locally.

#### **Local Structure Plans**

18. County, District and Local Councils have Structure Plans and other policy documents that include targets and policies which aim to maintain and enhance biodiversity through the planning system.

## C METHODOLOGY

### C.1 Scope of the Assessment

#### C.1.1 Zone of Influence

19. The predicted zone of influence is considered to be the Daking Brook and the immediate surrounding area. However, for the purposes of the data search, the potential zone of influence for water voles has been considered up to 2km from the site.

#### C.1.2 Ecological Resources/Features Considered Relevant

20. Table 3 lists the ecological resources/features that are considered within this report. These resources/features are considered relevant to the site and type of development proposed.

**Table 3. Ecological Resources/Features Considered Relevant**

RESOURCE/FEATURE
Internationally Designated Wildlife Sites
Nationally Designated Wildlife Sites
Locally Designated Wildlife Sites
European Protected Species
UKBAP Species or Habitats
Barnsley LBAP

#### C.1.3 Barnsley Biodiversity Action plan

21. The Barnsley Local Biodiversity Action Plans LBAP includes a Species Action Plan for water voles.

- SAP3 Water vole

### C.2 Desk Study

1

#### C.2.1 Records Data Search

Ecological record information for the site and surrounding area was requested from the organisations included within Table 4. The type of records requested and the distance from the site are also included within Table 4.

**Table 4. Consulted Records Organisation**

DATE CONSULTED	ORGANISATION	RECORDS REQUESTED
August 2015	Barnsley Biological Records Centre	Water vole records within 2km of the site

### C.3 Field Survey

22. Table 7 lists the surveys carried out on site and the personnel who undertook them. Summary methodologies are also provided below.

**Table 5. Survey, Dates, Type and Personnel**

DATE	SURVEY TYPE	PERSONNEL
27 <sup>th</sup> September 2017	Assessment of the water course to look for evidence of water voles to indicate presence / absence	Belinda Wiggs (BA Hons), MCIEEM Senior Ecologist Aran Leaf (BSc) Grad CIEEM Ecologist

#### C.3.1 Water Vole Survey

23. During a water vole survey, hydrological features such as water depth and flow rate; physical features such as width and bank profile; bank structure such as whether it is earth, silt, rock, concrete, etc., are recorded. The vegetation on the banks, marginal and aquatic plants within the watercourse area also recorded.
24. The watercourse is assessed for its ability to provide suitable habitat for water vole. Habitat suitability is based on the “Best practice guidelines” published by Stacham and Moorhouse 2006 and Chanin 2003 together with surveyor experience.
25. The surveyor aims to determine the presence / likely absence of water voles on the watercourse. This is achieved by surveying the length of the watercourse and searching for any signs of water vole, which include droppings, latrines, feeding remains of plant stems, feeding lawns and burrows which are 4 to 8cm across with round with smooth entrance holes. Water vole tracks/prints are hard to distinguish from rat tracks/prints so they are not a reliable field sign.
26. The banks of the water course are examined from the opposite bank using binoculars. Where the water is shallow enough, the bank can be assessed from the water, by an ecologist wearing wellingtons or waders.
27. Where the banks are densely vegetated it may not be possible to view the opposite bank clearly. In some places the water may be too deep and therefore entering it will not be practicable.
28. At Cannon Hall, in order to get a clear and safe view of each bank, the survey was carried out from an inflatable boat. All required health and safety procedures for the use of a boat were considered.

## D RESULTS

### D.1 Records Data Search

29. Barnsley Biological Records centre returned no records for water voles in this area.

### D.2 Field survey – September 2017

30. The Daking Brook at Cannon Hall is 750m long and 50m wide at the widest point. In some places, especially in The Top Pond, the water is shallow enough to walk in, whilst wearing wellies. Further downstream in The Middle Pond and especially The Lower Pond the water is too deep to enter.

31. In some places the vegetation is not too dense to view the opposite bank using binoculars. However, along most if the watercourse either one bank or the other is densely vegetated, which prohibits the clear viewing of the opposite bank.

32. Therefore the use of an inflatable boat was employed to enable each bank to be assessed closely.

### D.3 Habitat

33. The banks of the watercourse are well vegetated with dense trees and scrub including birch *Betula pendula*, alder *Alnus glutinosa*, crack willow *Salix fragilis*, goat willow *Salix caprea*, hazel *Corylus avellana*, ash *Fraxinus excelsior*, elm *Ulmus glabra*, sycamore *Acer pseudoplatanus*, wild plum *Prunus* sp. and rowan *Sorbus aucuparia*, There are also several large standing dead wood trees.

34. Scattered scrub occurs mainly as an understorey and on the peripheries of the woodland and along the watercourse. The scrub species include blackthorn *Prunus spinosa*, holly *Ilex aquifolium*, goat willow, and regeneration of other species such as sycamore, ash, oak *Quercus petraea*, elm and birch.

35. Along the banks of the river the uncut vegetation is dominated by tall ruderals such as creeping thistle *Cirsium arvense*, hogweed *Heracleum sphondylium*, great willowherb *Epilobium hirsutum*, cow parsley *Anthriscus sylvestris*, broadleaved dock *Rumex obtusifolius*, rosebay *Chamerion angustifolium*, meadowsweet *Filipendula ulmaria*, greater bird's foot trefoil *Lotus pedunculatus*, marsh woundwort *Stachys palustris*, common hemp-nettle *Galeopsis tetrahit* and valerian *Valeriana officinalis*.

36. Closer to the river are plants more indicative of wetland habitats such as soft rush *Juncus effusus*, hard rush *J. inflexus*, and sharp flowered rush *J. acutiflorus*, brooklime *Veronica beccabunga*, water plantain *Alisma plantago-aquatica*, water mint *Mentha aquatica*, marsh cudweed *Gnaphalium uliginosum* and skullcap *Scutellaria galericulata*.

37. In The Bottom Pond floating aquatic plants occur as large beds of yellow water lilies *Nuphar lutea*. At the end of the site the width of the river is dominated by beds of common reed *Phragmites australis*.

#### **D.4 Banks**

38. In some places, especially in The Top Pond, the mown amenity grassland occurs right up to the top of the banks on the waters' edge.
39. The majority of the banks are approximately 1m above the level of the water and are primarily earth banks. In some areas the earth bank is bare but in most places it is covered by overhanging vegetation.
40. The well vegetated earth banks provide excellent potential habitat for water voles as they require earth to burrow into and a variety of vegetation types as a food source. Also the dense vegetation could provide cover to enable safer movement along the banks.

#### **D.5 Water Voles**

41. Despite the excellent habitat suitability for water voles, the site is very well used by the public and this constant disturbance is likely to deter water voles from using this watercourse.
42. No evidence of water vole field signs such as droppings, latrines, feeding signs or lawns were found during the survey.
43. No burrows, either water vole or rat, were located due to the density of the vegetation on the banks.

#### **D.6 Invasive species**

44. No invasive species were found during the survey.

#### **D.7 Constraints**

45. Having the use of the inflatable boat made it possible to access the majority of the banks. However there were still short stretches of banks that were inaccessible due to the presence dense overhanging vegetation. Therefore, if practicable, these areas should be inspected once the vegetation has been cut back and removed to check for the possible presence of water vole burrows.

## **E CONCLUSIONS AND RECOMMENDATIONS**

46. No records were returned of water voles within 2km of the site.
47. No field signs for water voles were found during this survey on the Daking Brook.
48. The occurrence of three field signs at a site is necessary to determine the presence of water voles therefore we must conclude that water voles are not present at the site.
49. Having the use of the inflatable boat made it possible to access the majority of the banks. However, there were still short stretches of banks that were inaccessible due to the presence of dense overhanging vegetation. Therefore, if practicable, these areas should be inspected once the vegetation has been cut back and removed to check for the possible presence of water vole burrows.
50. It is recommended that a suitably experienced ecologist is on call or on site during the dredging works and vegetation removal to check for any potential water vole burrows not visible during the survey. Otherwise, water voles do not require any further consideration during the dredging works scheduled for February 2018.

## F REFERENCES

Strachan, R. & Moorhouse, T. (2006) *Water Vole Conservation Handbook- Second Edition*. Oxford: Wildlife Conservation Research Unit, Oxford.

Anon (1995) The UK Biodiversity Action Plan. Joint Nature Conservation Committee, Peterborough.

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Doncaster MBC, 2015. *Local Development Framework Biodiversity Map*. [Online] Available at: <http://doncaster.opus3.co.uk/ldf/maps/Biodiversity> [Accessed 16th June 2015].

JNCC, 2010. *Handbook for Phase 1 habitat survey*. Peterborough: Joint Nature Conservation Committee.

### F.1 UK Legislation and Policy Web Addresses:

Conservation of Habitats and Species Regulations 2010:

[http://www.opsi.gov.uk/si/si2010/uksi\\_20100490\\_en\\_1](http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1)

Habitats Directive:

[www.europa.eu.int/eur-lex/en/lif/dat/1992/en\\_392L0043](http://www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043)

Wildlife and Countryside Act 1981:

[www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga\\_19810069\\_en\\_1](http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1)

Countryside and Rights of Way Act 2000:

[www.legislation.hmso.gov.uk/acts/acts2000/20000037](http://www.legislation.hmso.gov.uk/acts/acts2000/20000037)

Natural Environment and Rural Communities Act 2006:

[http://www.opsi.gov.uk/acts/acts2006/ukpga\\_20060016\\_en\\_1](http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1)

National Parks and Access to the Countryside Act 1949:

[http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga\\_19490097\\_en\\_1](http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1)

National Planning Policy Framework:

<http://www.communities.gov.uk/publications/planningandbuilding/nppf>