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# Ampney Park

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## Water Vole and Otter Survey

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May 2022

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# Contents

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<b>1. Introduction</b>	<b>1</b>
<b>1.1 Background</b>	<b>1</b>
<b>1.2 Objectives</b>	<b>1</b>
<b>1.3 Personnel</b>	<b>2</b>
<b>2. Methods</b>	<b>3</b>
<b>2.2 Water Vole Survey</b>	<b>3</b>
<b>2.3 Otter</b>	<b>3</b>
<b>3. Results</b>	<b>4</b>
<b>4. Evaluation</b>	<b>9</b>
<b>4.1 Water Vole</b>	<b>9</b>
<b>4.2 Otter</b>	<b>9</b>
<b>5. Recommendations</b>	<b>9</b>
<b>5.2 Protection Measures</b>	<b>10</b>
<b>5.3 Lighting</b>	<b>10</b>
<b>5.4 Suggested Enhancement Measures/Sensitive Management</b>	<b>11</b>
<b>6. Annexes</b>	<b>12</b>
<b>Annex 1: Water Vole and Otter Survey Results (May 2022) and Areas identified for Enhancement/Management</b>	<b>12</b>
<b>Annex 2: Photographs (May 2022)</b>	<b>13</b>

# 1. Introduction

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## 1.1 Background

- 1.1.1 In May 2022, Seasons Ecology was instructed by Simon Morray-Jones, on behalf of their client, the landowner, to undertake a water vole and otter survey to inform development proposals at Ampney Park, Ampney Crucis, Cirencester (central grid reference: SP 06456 01901).
- 1.1.1 The Ampney Brook, a tributary of the River Thames, flows through the south and west of the Ampney Park grounds. There are a number of streams, two ponds and two lakes diverting off from the Ampney Brook throughout the site.
- 1.1.2 The Preliminary Ecology Appraisal undertaken of the site by Seasons Ecology in May 2021, assessed Ampney Brook and its associated streams and ponds/lakes to support suitable habitats for water vole and otter. Foodplants for water vole grow along the banks, such as bur-reed *Sparganium* species and yellow iris *Iris pseudacorus* and possible signs of water vole was recorded along the banks of Lake 2 in the form of characteristically 45 degree-angled cut stems of pendulous sedge *Carex pendula*. No further obvious evidence for water vole (such as burrows, tracks or latrines) were observed at the time of the survey. The Ampney Brook and its associated network of streams across the site was also assessed to provide suitable refuge and foraging habitats for water vole, due to the presence of shallow and steep banks and areas of lush riparian vegetation.
- 1.1.3 No evidence of otters, such as holts, slides, lay-ups or spraint, was recorded on site at the time of the Preliminary Ecology Appraisal. The Ampney Brook and its associated networks of streams, and the larger pond and lakes on site feature banks with areas containing large, exposed root systems of overhanging trees and tree stumps which were assessed to offer suitable locations for holts. Woodland adjacent to the water bodies were also assessed to provide foraging and commuting cover for otter. It was considered probable that fish populations are present within some or all of the water bodies, providing a resource for otter on site. The Ampney Brook is also a tributary of the River Thames, where an established population of otter is known. It was therefore considered that there is potential for otter to utilise the habitats on site for refuge, foraging and commuting to wider sections of Ampney Brook off site and beyond to the River Thames.
- 1.1.4 A web-based desk-based study undertaken in May 2021 by Seasons Ecology, as part of the Preliminary Ecology Appraisal, did not return any records or licenses for either water vole or otter within 2km of the site.

## 1.2 Objectives

- 1.2.1 The objectives of the survey are to identify the presence of water vole and otter along the Ampney Brook and its associated streams, ponds and lakes and up to 100m upstream and downstream of the site. The results will be used to inform the approach to the development proposals for the site.

### **1.3 Personnel**

- 1.3.1 The survey was undertaken by Callum Pearson qualifying CIEEM, experienced and trained in water vole and otter surveys, and assisted by Emma Shaw. The survey and reporting were overseen by Kate Hayward MCIEEM, Director and Principal Ecologist.

## 2. Methods

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2.1.1 A survey of the Ampney Brook, its associated streams, ponds and lakes and up to 100m up and downstream of the site, where accessible, was undertaken in May 2022 to search for signs of water vole and otter.

### 2.2 Water Vole Survey

2.2.1 The water vole survey was undertaken in line with the methodology detailed in the Water Vole Conservation Handbook (Strachan *et al*, 2011<sup>1</sup>) and the Water Vole Mitigation Handbook (Dean *et al*, 2016<sup>2</sup>). This comprised an assessment of habitat suitability and a search for field signs.

2.2.2 The survey searched for evidence of water vole activity, including:

- Burrows and runs;
- Footprints;
- Droppings and latrines; and
- Feeding remains.

2.2.3 The presence and distribution of these signs was used to assess the current use of the Ampney Brook and associated streams, ponds and lakes on site by the local water vole population.

### 2.3 Otter

2.3.1 The otter survey followed the methodology in The New Rivers and Wildlife Handbook (Ward *et al*, 1994<sup>3</sup>) and Natural England Standing Advice (NE, 2014<sup>4</sup>) and National Rivers Authority Technical Handbook (National Rivers Authority, 1993<sup>5</sup>).

2.3.2 The survey searched for evidence of otter activity, including:

- Holts, often found between tree roots, cavities in banks, rabbit burrows or hollow trees;

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<sup>1</sup> Strachan, R., Moorhouse, T. and Gelling, M. (2011) Water Vole Conservation Handbook (Third edition). WildCRU, Oxford.

<sup>2</sup> Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Matthews, F. and Chanin, P. The Mammal Society, London.

<sup>3</sup> Ward D, Holmes N and José P (1994). The New Rivers and Wildlife Handbook. RSPB, Bedfordshire.

<sup>4</sup> Natural England (2014). Otters: surveys and mitigation for development projects. [online] <https://www.gov.uk/guidance/otters-protection-surveys-and-licences>

<sup>5</sup> National Rivers Authority (1993). Otters and River Habitat Management. Conservation Technical Handbook Number 3.

- Spraint (faeces), often found in elevated positions, on large stones, under bridges, trees fallen across the river, tree roots or grass piles on the bank;
- Feeding remains;
- Paw prints left in mud or silt;
- Runways (pathways across fields, usually at bends in streams or rivers); and
- Slides and haul-out places.

2.3.3 The presence and distribution of these signs was used to assess any use of the Ampney Brook and its associated streams, ponds and lakes by otter.

## 3. Results

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3.1.1 A plan of the survey area and results is provided at Annex 1. Photographs of the survey area are provided at Annex 2.

3.1.2 Table 1 below provides a description of the Ampney Brook and associated streams, ponds and lakes within the survey area, suitability assessment and details any fields signs found.

Table 1. Water Vole and Otter Survey Results, May 2022

Water Body	Description	Water Vole Signs (see Annex 1) and Suitability	Otter Signs (see Annex 1) and Suitability
Ampney Brook and associated streams	<p>The Ampney Brook flows from the south-east of the site westwards along the south boundary (Section A), through a sluice (Section B), and then flows northwards along the western boundary of the site (Section C).</p> <p>Section A of the Ampney Brook flows through a deciduous woodland. The channel at this section is approximately 5m wide, relatively straight, deep and slow-flowing. The banks along this section vary from steep to shallow and are grass-covered with woodland ground flora, including hart's-tongue fern <i>Asplenium scolopendrium</i> and pendulous sedge <i>Carex pendula</i>. Mature alder <i>Alnus glutinosa</i> line the brook in the north. Silt forms the channel bed substrate. Aquatic vegetation is limited.</p> <p>Section B of the Ampney Brook is slow-flowing and relatively straight with a channel width of approximately 1m. The banks of the brook at this section are steep and constructed of stone with adjacent habitats of well-maintained amenity grassland with herbs.</p> <p>Section C of the Ampney Brook splits into two channels which both flow northwards parallel to each other along the western boundary of the site. The main river is the western channel, which is approximately 5m wide, fast-flowing, deep and straight. Several shallow streams flow off this channel forming a small network of channels and pools within the surrounding woodland. Aquatic vegetation is limited. The left</p>	<p>No evidence of water vole was recorded along the Ampney Brook and associated streams.</p> <p>A number of potential mammal entrances were recorded across all three sections of the Ampney Brook. However, these entrances tended to be circular in shape and less than 4cm wide (usually water vole burrows are oval-shaped and between 5-8cm wide). Furthermore, there was absence of other signs to indicate water vole, such as footprints, latrines or feeding signs around these entrances.</p> <p>Large areas of Sections A and C are heavily shaded by the adjacent woodland with limited lush foodplants for water vole, and Section B features stone banks which are unsuitable for burrows.</p>	<p>Otter prints in mud were recorded along the eastern channel of Section C, in the north, where the stream has dried up (Target Note 1).</p> <p>Otter spraint was also recorded in two separate locations along the Ampney Brook; on a rock at the southern end of the eastern channel of Section C, and underneath the stone bridge crossing the channel between Sections A and B (Target Note 2).</p> <p>No further signs of otter were recorded.</p> <p>The banks of the Ampney Brook and its associated streams support trees and shrubs with roots exposed along the banks, which provide suitable lay-up sites and holt locations.</p> <p>The Ampney Brook on site connects to the River Thames, a larger watercourse which is known to support otter, approximately</p>

Water Body	Description	Water Vole Signs (see Annex 1) and Suitability	Otter Signs (see Annex 1) and Suitability
	<p>(west) bank becomes steep and vegetated with harts-tongue and shield ferns <i>Polystichum</i> species, and several large tree trunks with numerous gaps and crevices. The right bank (east) is shallow and vegetated with woodland flora.</p> <p>The eastern channel along Section C, is narrow, approximately 1m-3m wide and fast-flowing, shallow and meandering. Occasional patches of fool's water-cress <i>Apium nodiflorum</i> is present. The banks are vegetated with woodland and marginal species including yellow, water mint <i>Mentha aquatica</i> and soft-rush <i>Juncus effusus</i>, with overhanging mature trees, predominantly alder. Several large, felled trees cross the channel along this section.</p>		<p>9km to the south-east of the survey area. Otters have been shown to use up to 20km of river habitat and therefore this section of Ampney Brook could be utilised by the population of otter supported by the River Thames.</p>
Pond 1	<p>Located within the woodland in the west of the site. Approximately 0.12 hectares (1,200m<sup>2</sup>) in size and appears over 1m deep at its centre. There is extensive submerged fool's water-cress with water mint, soft-rush and yellow iris along the margins. Large, mature trees overhang the pond and a layer of pondweed covers approximately 20% of the water's surface.</p>	<p>No evidence of water vole was recorded at Pond 1.</p> <p>This pond is generally unsuitable for water vole, having no running water, being heavily shaded from overhanging woodland trees and featuring very shallow banks, which are unsuitable for burrows.</p>	<p>No evidence of otter was recorded at Pond 1.</p> <p>This pond does not feature any large, exposed root systems of overhanging mature trees and the presence of fish is unknown to provide a food resource for otter.</p>
Pond 2	<p>Located along the northern boundary of the sheep-grazed pasture, this pond was dry at the time of the water vole and otter survey.</p> <p>The Preliminary Ecology Appraisal (May 2021) described the pond as being approximately 0.006 hectares (60m<sup>2</sup>) in size and shallow, appearing less than 50cm deep. The pond features a mature, overhanging willow with part of its root</p>	<p>No evidence of water vole was recorded at Pond 2.</p> <p>This pond is unsuitable for water vole, being dry for several months of months of the year and no vegetation on/adjacent to its banks to offer foraging resources.</p>	<p>No evidence of otter was recorded at Pond 2.</p> <p>The exposed root system of the overhanging willow offers a suitable holt site for otter; however, no holts were identified.</p>

Water Body	Description	Water Vole Signs (see Annex 1) and Suitability	Otter Signs (see Annex 1) and Suitability
	system exposed. The banks are gently shelving and poached by sheep. There was no aquatic vegetation evident at the time of the survey.		The pond is absent of fish, being dry for several months of the year and therefore it does not support a source of food.
Lake 1	Located within the woodland within the south-west of the site. Approximately 0.08 hectares (810m <sup>2</sup> ) in size. It appears over 1m deep at its centre. The banks of the lake are shallow and vegetated with well-maintained amenity grassland and woodland flora such as daffodils <i>Narcissus</i> species, English bluebell <i>Hyacinthoides non-scripta</i> and snake's-head fritillaria <i>Fritillaria meleagris</i> , with a small patch of bur-reed. A low number of mature trees overhang the lake and pondweed covers approximately 10% of the surface area.	No evidence of water vole was recorded at Lake 1.  This lake is generally unsuitable for water vole, with no running water and very limited areas of lush vegetation to provide foraging habitat.	Otter spraint was recorded on a wooden bridge at Lake 1 (Target Note 2).  This lake does not feature any large, exposed root systems of overhanging mature trees; however, it does support a fish population, providing a foraging resource for this species.
Lake 2	Located in the south of the site within woodland. It is approximately 0.77 hectares (7,700m <sup>2</sup> ) in size and appears up to 2m deep in places. The banks of the lake are shallow and predominately grass-covered with occasional patches of marginal vegetation, ornamental planting and woodland ground flora, including cow parsley <i>Anthriscus sylvestris</i> and wood spurge <i>Euphorbia amygdaloides</i> . A small section of the southern bank is constructed of stone. A patch of common reed <i>Phragmites australis</i> grows at the western margin of the lake. Mature trees and cherry laurel <i>Prunus laurocerasus</i> shrubs overhang and partially shade the lake. The lake features an island approximately 0.08 hectares (800m <sup>2</sup> ) in size. The island is tree-covered with brash and log piles.	No evidence of water vole was recorded at Lake 2.  Previous possible signs of water vole were recorded along the banks of Lake 2 in the form of characteristically 45 degree-angled cut stems of pendulous sedge (Target Note 3) during the Preliminary Ecology Appraisal (May 2021), however this was not recorded during the present survey.  The lake offers suitable foraging habitat, provided by the presence	No evidence of otter was recorded at Lake 2.  This lake does not feature any large, exposed root systems of overhanging mature trees; however, the lake does support a population of fish, providing a foraging resource for this species.

Water Body	Description	Water Vole Signs (see Annex 1) and Suitability	Otter Signs (see Annex 1) and Suitability
		of lush vegetation and occasional shading by mature trees along the banks.	

## 4. Evaluation

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### 4.1 Water Vole

- 4.1.1 The survey area provides sections of suitable habitat for water vole, along the Ampney Brook, where shading is not too heavy and foodplants are present along earthy banks with varying gradients; however, no confirmed water vole burrows were recorded during the survey. Possible feeding remains of water vole was recorded on the banks of Lake 2 during the Preliminary Ecology Appraisal (May 2021), however no other signs of water vole was observed, and no signs of water vole were observed during this survey.
- 4.1.2 It is considered that the section of Ampney Brook flowing through the site, with its associated network of streams, ponds and lakes is unlikely to support a population of water vole. However, these water bodies could be used occasionally by this species for foraging and commuting purposes.

### 4.2 Otter

- 4.2.1 The survey area offers natural habitats for otter such as tree roots, which provide shelter and the Ampney Brook, Lake 1 and Lake 2 are known to support fish populations, providing foraging opportunities for otter. Recent signs of otter were recorded during the survey; otter prints within the mud where the eastern channel in Section C of the Ampney Brook has dried up and otter spraint in three separate locations within the south-east of the grounds.
- 4.2.2 No holts were recorded across the survey area. However, based on the presence of prints and spraint and suitability of this section of the Ampney Brook and its associated streams, ponds and lakes, it is considered that the site is used regularly by otter for foraging and commuting. Otter may shelter in locations outside the survey area, such as further along the Ampney Brook towards the River Thames or deeper within the adjacent woodlands across the Ampney Park grounds.

## 5. Recommendations

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- 5.1.1 Ampney Park is the subject of proposals to create a wedding venue, with the replacement of the existing Grounds Building with a New Multi-Functional Gathering Space, replacement of the current indoor Horse Arena and tennis courts with a New Events Building, landscaping and car parking, and a New Opening and Highway Interface in the south-east corner of the grounds with an associated New Drive Connection.
- 5.1.2 Recommendations are provided below for the protection of the water bodies on site and for the protection of otter, and precautionary protection measures for water vole. Suggestions for enhancements and sensitive management are also provided.

## 5.2 Protection Measures

5.2.1 Protection measures for the water bodies and otter and water vole should be included in a Construction Environmental Management Plan for the development proposals. This should detail the following measures:

### Construction Environmental Management Plan (CEMP)

5.2.2 Ecological Responsibilities – The appointments of an Ecologist and Ecological Clerk of Works to assist in the implementation of the CEMP. These are external roles. The appointment of a Biodiversity Champion to ensure adherence to the CEMP. This is an internal role for a lead site contractor/manager with a daily presence on site.

5.2.3 Toolbox Talk – Provided by the appointed Ecologist or Ecological Clerk of Works to explain the presence of and potential for protected species, their protected status and to run through the details of the CEMP.

5.2.4 Protection Fencing – The alignment of protection fencing for each of the development areas will be defined in the CEMP. The construction and working areas of the development areas away from the water bodies should be enclosed with protection fencing to protect adjacent habitats and prevent machinery and site workers from accessing areas outside of the works areas. For development areas adjacent to the water bodies (e.g. New Multi-Functional Gathering Space and New Opening and Highway Interface in the south-east corner of the grounds with an associated New Drive Connection), the water bodies and associated habitats should be protected with fencing, which should include an appropriate buffer between the water bodies and working areas.

5.2.5 Working Methods – Working methods should be identified for each development area depending on their proximity to the water bodies and associated habitats. This should include the following:

- Requirement for pre-works checks/surveys by the Ecologist.
- Requirement for protected species licensing following checks/surveys (in relation to water vole and otter, currently no licensing requirements have been identified).
- Any additional protection measures required, including pollution prevention measures, restrictions on construction phase lighting and hours of work.
- Requirement for supervision of construction works by the Ecological Clerk of Works particularly those in proximity to the water bodies.
- Daily checks by the Biodiversity Champion (of protection fencing, for example).
- Prevention of trap hazards (otter is a naturally inquisitive animal and may be attracted to any development activity within their environment).

## 5.3 Lighting

5.3.1 Operational lighting will need to consider the immediate surroundings. For developments near to the water bodies, lighting will need to avoid illuminating the water bodies and light

spill will need to be very low-level to maintain their function as foraging and commuting corridors for otter (and other animals).

## 5.4 Suggested Enhancement Measures/Sensitive Management

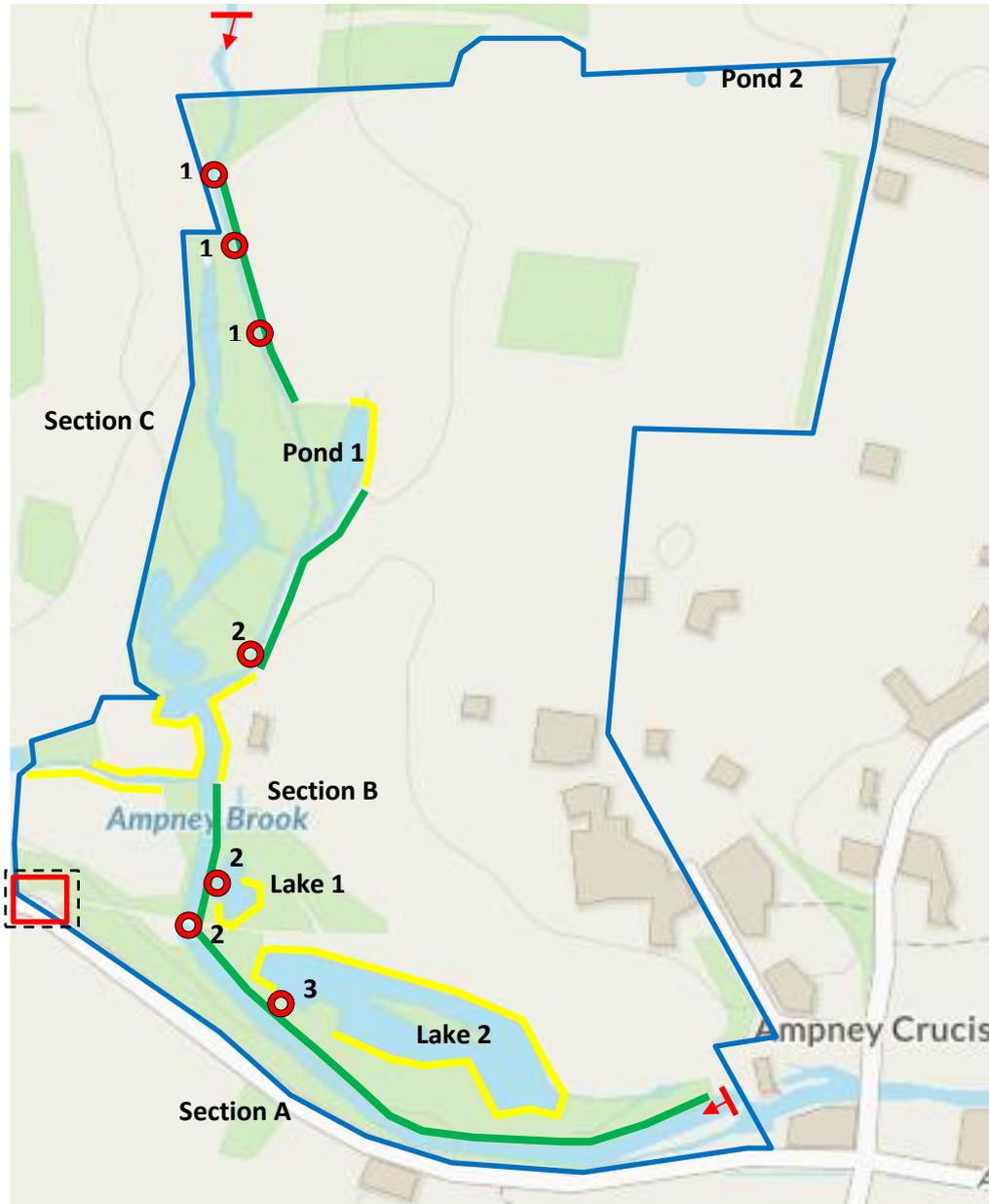
5.4.1 The survey identified over-shading along sections of the Ampney Brook and its associated streams and identified limited foodplants areas along sections of the banks. There is evidence of over-management around the two lakes and across the eastern banks of the Ampney Brook at Section B.

5.4.2 The following is recommended:

- Shading along sections of the Ampney Brook and its associated streams is reducing their suitability to water vole. Much of this shading is due to overhanging mature trees within the adjacent woodland. However, these trees offer habitats to wildlife, including otter and should be retained. Therefore, the focus of management to reduce shading is recommended of the vegetation along the north bank of Section A, east bank of Section B and east bank of Section C, where the woodland is less dense. Vegetation could be thinned and cut back to open up the channel, whilst retaining some shaded sections. An update survey of the banks for water vole burrows should be undertaken prior to any management works.
- A 3m wide strip of grass should be left uncut adjacent to the banks of the two lakes, the Ampney Brook and associated streams and ponds where possible, with one annual cut in late August/September. This will provide cover and resources for water vole.
- Plug planting of beneficial plants, including meadowsweet *Filipendula ulmaria*, purple loosestrife *Lythrum salicaria*, reed canary-grass *Phalaris arundinacea*, greater tussock sedge *Carex paniculata* and further yellow iris and *Carex* species along the banks would also enhance resources for water vole.

## 6. Annexes

### Annex 1: Water Vole and Otter Survey Results (May 2022) and Areas identified for Enhancement/Management



#### Key



Survey Area



Ampney Park Grounds



Target Notes:

1. Otter print

2. Otter spraint

3. Previously identified possible water vole sign (May 2021), not recorded during the current survey

Area of Vegetation Thinning and Management

3m Wide Strip Left Uncut and Plug Planting

## Annex 2: Photographs (May 2022)

1. Otter prints in mud along the north section of the eastern channel at Section C (Target Note 1).



2. Further otter prints in mud along the north section of the eastern channel of Section C (Target Note 1).



3. Otter spraint on a rock at the southern end of the eastern channel of Section C (Target Note 2).



4. Otter spraint on the wooden bridge at Lake 1 (Target Note 2).

