THE CART WASH POND, SUTTON FARM, SUTTON ON DERWENT, EAST YORKSHIRE

ARCHAEOLOGICAL AND WILDLIFE SURVEY

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On behalf of

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EXECUTIVE SUMMARY

In December 2011, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by T H Hobson Ltd, through Natural England, to undertake a Level 2 archaeological and historical survey of the cart wash pond at Sutton Farm, Sutton upon Derwent, East Yorkshire (NGR SE 70505 45005). The project also included a wildlife survey as well as drawing up appropriate mitigation measures to assist with the restoration of the pond as a wildlife and landscape feature.

Although examples do exist of agricultural ponds converted to an ornamental function, in its earliest form the pond was most probably purpose-built as an ornamental feature associated with Sutton Hall, rather than serving any agricultural purpose. Originally, the pond was very slightly sub-square, measuring 13.5m by 13.0m. Its vertical sides rose from a shallow plinth, and were built of buff/light-red handmade bricks, laid in English garden wall bond and pointed with a lime mortar. The sides were surmounted by flat sandstone coping stones, and the total depth of the pond from the top of the sides to the apparent brick or flagstone base was between 1.20m to 1.40m, although the depth of water would obviously have been slightly less than this. The original source of water for the pond is not known, but rainwater may have been piped from the gutters on the Hall. Similarly, it is not known if there was an original outlet and where this was located. The pond may be contemporary with the Hall i.e. built around 1810, or possibly was a slightly later addition to its landscape, forming part of a more formal layout to the east of the house.

The pond preserves evidence for several episodes of repair or rebuilding, and it is likely that these works largely date from the period when the pond still fulfilled an ornamental function. At some point after 1910, the north side of the pond was crudely dragged out, and it is possible that a ramp of some kind was built down into it from the trackway/farmyard area to the north. The most likely purpose for this would be to create a drinking pond for stock.

Although it is possible that carts could have been driven into the pond to be washed after a ramp was built, it is highly unlikely that the pond was specifically converted into a cart wash. Such structures appear to have been uncommon, and only the largest model farms or those using substantial numbers of wheeled vehicles would have constructed purpose-built examples, smaller farms such as Sutton Farm making use of a local ford or shallow watercourse to wash carts when necessary. The pond has evidently continued to hold water into the modern period, as demonstrated by a concrete overflow built into the base of the north side. However, it has not been well maintained, and the east and west sides in particular have been badly affected by the roots of adjacent trees.

1 INTRODUCTION

Reasons and Circumstances for the Project

1.1 In July 2010, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by T H Hobson Ltd, through Natural England, to undertake an archaeological and historical survey of the cart wash pond at Sutton Farm, Sutton upon Derwent, East Yorkshire. The project also included a wildlife survey as well as drawing up appropriate mitigation measures to assist with the restoration of the pond as a wildlife and landscape feature. The scope of the project was defined by a brief prepared by Natural England, and an EDAS methods statement (see Appendices 3 and 4). The recording work was funded by Natural England via T H Hobson Ltd.

Site Location and Description

1.2 The pond forming the subject of the survey is located at Sutton Farm, set c.1km to the south of the southern end of the village of Sutton upon Derwent in East Yorkshire (NGR SE 70505 45005); access to the farm is via Southwood Road which leaves the south side of the B1228 Elvington to Melbourne road (see figure 1). The pond stands to the east of the farmhouse (sometimes also known as Sutton Hall), at an elevation of c.9m AOD, to the south-east of the farm complex (see figure 2). It is bounded to the south by a narrow belt of woodland, to the west by the garden of the house, to the east by enclosed fields and to the north by the trackway leading from the farm to the fields. A public footpath runs along the north side of the pond.

1.3 The pond is not currently statutorily protected, and it is not recorded on the Humber Archaeology Partnership's Historic Environment Record (HER) or English Heritage's National Monuments Record (NMR); the adjacent Sutton Hall is however listed as a Building of Special Architectural or Historic Interest, Grade II (listed on 14th April 1987) (see below). As far as can be ascertained, the pond has not been the subject of any previous research.

Aims and Objectives

1.4 The objectives of the project were to produce an archaeological and wildlife survey of the cart wash, and to prepare proposals for any necessary oversight during subsequent restoration of the pond and removal of associated vegetation.

Survey Methodologies

1.5 As noted above, the scope of the archaeological and wildlife survey work was defined by a Natural England brief and an EDAS methods statement (see Appendices 3 and 4).

Documentary Research

1.6 A limited amount of archaeological and historical documentary research was required for the project, from readily available primary and secondary sources. It was already known that the pond was not recorded on the Humber Archaeology Partnership's HER and English Heritage's NMR. However, both data sources were consulted for information regarding any known sites in the immediate vicinity, including aerial photographs. The East Riding Archive Office (ERAO) in Beverley, and the Hull History Centre, were also consulted for information relating to the

pond and its immediate vicinity. Other research was undertaken in local libraries; a full list of primary and secondary sources consulted are given in the Bibliography (see Chapter 6).

1.7 Existing information regarding ecological data for the cart wash pond and within a 2km radius was collected and assessed for the wildlife survey. Consultees approached included the North and East Yorkshire Ecological Data Centre.

Archaeological Field Survey

1.8 A Level 2 archaeological survey of the pond and its immediate environs was carried out to record the position and form of all features considered to be of archaeological and/or historic interest; a Level 2 survey is a descriptive record (English Heritage 2007, 23). The survey was undertaken at a scale of 1:50 using traditional hand survey techniques. Sufficient information was gathered to allow the survey area to be readily located through the use of surviving structures, fences, walls, water courses and other topographical features. The survey recorded the position at ground level of all structures, wall remnants and revetments, earthworks, water courses, paths, stone and rubble scatters, ironwork, fences, hedges and other boundary features, and any other features considered to be of archaeological or historic interest. In addition, two profiles across the pond were produced at a scale of 1:100, again using traditional hand survey techniques. Sufficient detailed notes and observations were made in the field to allow a detailed record of the pond to be prepared. The resulting surveys were produced at a scale of 1:50 and 1:200 and are presented in this report as interpretative hachure plans using conventions established by English Heritage (1999; 2007, 31-35). Larger scale plans, at 1:10,000 and 1:2,500 scale, were also used to put the survey area into context.

1.9 The pond and any other relevant features were also photographically recorded using a digital camera with 10 megapixel resolution. English Heritage photographic guidelines were followed (English Heritage 2007, 14) and each photograph was normally provided with a scale, subject to access. More general digital photographs were also taken showing the wider landscape context of the pond. All photographs have been clearly numbered and labelled with the subject, orientation, date taken and photographer's name, and cross referenced to digital files etc (see Appendix 1).

1.10 Despite the project being commissioned in July 2010, numerous administrative delays meant that authorisation to proceed was not given until May 2011. Although the fieldwork for the wildlife survey was done soon after (see below), the extent of vegetation surrounding the pond meant that the archaeological survey had to wait until the winter months; the survey was undertaken on 16th December 2011.

Wildlife Survey

1.11 The wildlife survey involved inspecting the pond, to confirm the presence or absence of protected species and other items of interest, and if present, to assess and inform any future repair programmes. A number of survey techniques were utilised.

1.12 A Phase I Habitat Survey was undertaken using the standard methodology devised by English Nature (1993), on 16 May 2011. The vegetation within the pond and the immediate vicinity was mapped onto a large scale plan using standard

alphanumeric codes, which were used to produce a coded habitat map. Further information was described in the form of target notes which provide supplementary information on species composition and structure, evidence of management, habitats too small to map and transitional or mosaic habitats. The data gathered on the composition of the vegetation was sufficient to enable it to be characterised and assessed. Notes were also made on other species seen on site, including any tracks or signs of mammals, birds and invertebrates.

1.13 A great crested newt survey was also undertaken, to identify the presence or absence of any great crested newts *Triturus cristatus*, a species protected under the Wildlife and Countryside Act 1981, the European Union's Habitats and Species Directive, and the Council of Europe's Bern Convention. A secondary aim was to assess the conservation value of the wetland and terrestrial habitats for great crested newts and other amphibians. Natural England stipulate that, in order to best confirm whether great crested newts occur on a site, four visits should be undertaken with at least three survey techniques used at each visit. They recommend that surveys should be undertaken between mid-March to mid-June, with at least two of these visits during mid-April to mid-May. The following survey methods were therefore used:

- Egg Search – this method involved searching through the aquatic vegetation (if any) close to the edge of the pond for great crested newt eggs. Eggs are laid singly on leaves of plants usually growing in less than 50cm of water and can be easily distinguished from the eggs of palmate and smooth newts by both size and colour characteristics. The main spawning period for newts is between April and June. The vegetation beside the pond was searched for eggs on 16th and 17th May 2011.
- Torchlight surveys were undertaken on 16th, 17th and 26th May, and 28th June 2011.
- Bottle trapping –12 bottle traps, constructed from two litre plastic bottles, were set around the margins of the small pond on 16th, 17th and 26th May 2011. After setting the traps they were then revisited early the following morning (17th, 18th and 27th May 2011 respectively), thereby ensuring the safety of any newts trapped. Each trap was set at c.2m intervals within sections of the different depths of the pond (10cm-35cm).

The weather on each of the above survey dates was generally dry and well above 10ºC. These conditions are suitable for amphibian activity.

1.14 Surveys to identify the common frog and common toads were also undertaken. For the common frog, the number of spawn clumps (if any) were counted; usually each female frog lays a single clump of spawn each year. Additional evidence is the presence of any frog tadpoles and/or the presence of adult frogs. The presence of the common toad was determined by evidence of eggs intertwined amongst any vegetation and counting the number of adult toads. Additional evidence is the presence of toad tadpoles and/or the presence of adult toads.

Report and Archive

1.15 This report forms a detailed written record of the pond, prepared from the sources of information set out above, cross-referenced to the drawn and photographic record, and wildlife survey. It describes the surviving structure, and analyses its form, function, history, and sequence of development, as far as is possible using the previously gathered information. The pond is also placed within its historical, social and agricultural context (where possible), using the available documentary and secondary evidence. This report also includes a summary of the results from

the wildlife survey, while the full unedited Wildlife Survey Report (Holloway 2011) appears as Appendix 2.

1.16 The full project archive, comprising paper, magnetic and plastic media, relating to the project has been ordered and indexed according to the standards set by the National Archaeological Record (EDAS site code SCW 11). It was deposited with the East Riding of Yorkshire Museum Service (accession code 2012/009) on completion of the project.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Context

2.1 The parish of Sutton upon Derwent has a long history of settlement. Various cropmarks suggest late prehistoric or Romano-British occupation in the areas around Wynam Bottoms (NMR SE74NW15-17), while a Bronze Age barrow cemetery has been identified on Newton Fields (NMR SE74NW18), both to the east of the village. A further potential Iron age or Roman settlement, represented by cropmarks of various enclosures and field boundaries, has been noted to the east of Woodhouse Grange (NMR SE74NW23). The name of the parish implies an Anglian settlement, and the distinctive suffix was used from the 13th century (Allison 1976, 173).

2.2 Archaeological investigations comprising fieldwalking and geophysical survey to the south-west of Sutton Farm in the area known as 'Cathards' (see below) identified a complex of rectilinear enclosures situated either side of an east-west aligned trackway which extended beyond the survey area. Subsequent trial excavation revealed that the site represented a large and important Romano-British settlement which might have been associated with a crossing of the Pocklington Beck (Chapman *et al* 1999, 174-188).

2.3 In the east of the parish, 'Woodhouse' had come into existence by the late 12th century, and a grange (outlying farm) of Kirkham Priory was established there. In Sutton Wood there is a raised motte surrounded by a sub-rectangular moat, perhaps representing a small fortified site guarding the nearby crossing of the river Derwent (NMR SE74NW2). Another part of the parish was known as 'Cathwaite', from the 14th century, probably centred on 'Cathwaite House' which is referenced in 1554; this area may lie to the south-east of Sutton Farm where a large field on the banks of the former course of the river (now a dyke) is named as 'Cathards' in 1850 (Allison 1976, 173). The investigations of this area noted above also found evidence for some limited medieval occupation.

2.4 The 1st edition 1854 Ordnance Survey map provides an indication of the agricultural regime during the post-medieval period. Numerous 'ings', 'meadows' and 'carrs' are marked close to the river, and Sutton Common formerly occupied a large area to the north-east of Sutton Farm. Large parts of the parish were enclosed from an early period, for example around Woodhouse, and the remainder was formally divided up in 1777 (*www.suttonuponderwent.org.uk*); the Enclosure Act and award date to 1776 and 1777 respectively (ERAO AP/3/25 & DDX31/181). The area to the north and north-west of Sutton Farm is named as 'South Wood' in 1854 and was divided by 'Southwood Road', the names reflecting a large area of woodland here, first mentioned in 1554, of which Broomhill Plantation is probably a surviving remnant.

Sutton Farm

2.5 As is noted below (see Chapter 3), the earliest buildings at Sutton Farm date to the mid 18th century, and it may be that the farm was constructed as a result of the enclosure of this area. Jefferys' map of 1771 shows no building on the site, although 'Sutton Farm' is marked on both Bryant's (1829) and Walker's (1834) map of East Yorkshire (ERAO DDX 6/1 & YE912). Unfortunately, in both cases, the scale is too small to see any pond to the east of the house.

2.6 In the 19th century Sutton Farm was also known as Sutton Hall, and the lords of the manor lived there rather than at the earlier manor house close to the church. In 1731 John Leveson-Gower, created Earl Gower, conveyed the manor of Sutton to Sir Thomas Clarges (d.1759) and, after passing through several generations, it came to Carnegie Robert John Jervis (1825-79), subsequently 3rd Viscount St Vincent, in 1857 (Allison 1976, 175). The Hall has a main front described by Pevsner and Neave (1995, 717) as being of 1810, and so was presumably built by one of the Clarges family, perhaps another Sir Thomas Clarges (d.1834). It has been reported elsewhere that the Hall was probably given to Earl St Vincent as a shooting lodge but the family then moved there permanently once they had to sell their Staffordshire estates (Arnold 1986, 49), although this cannot at present be substantiated.

2.7 In 1823 Sutton Farm was occupied by Charles Howard (Baines 1823) and in 1892 by Jonathan James Beal (Bulmer 1892); several generations of the Beals were tenants, from 1887 until 1947 (ERAO DDGD/962). In 1892 the St Vincent estate comprised the whole of the parish (some 2,487 acres) apart from Woodhouse which was then owned by the Crown (Bulmer 1892). Some 500 acres were sold in 1947 and 1,774 acres in 1948 to the Crown (Allison 1976, 175). Sutton Farm or Hall itself was sold by Lord St Vincent to Ena Meadowcroft in 1947. These sales must have taken place after an attempt to sell the whole estate in May 1947 failed - Sutton Farm, comprising 345 acres, was described as being the largest farm on the estate and with “some of the best land” while Sutton Hall and annex included one acre of garden which were “surrounded by well grown and ornamental trees and consists of lawns and herbaceous borders” (ERAO DDGD/962).

2.8 The pond is clearly visible on the first edition Ordnance Survey 1854 6” map, when it was depicted as a square body of water (see figure 3). The square pond is set at the north-east corner of an enclosed garden or orchard located to the south of the farmhouse; a wall or fence ran from the north-east corner of the house to the pond, apparently separating it from the farm area to the north. A smaller enclosure adjacent to the south side of the main enclosure may have been a vegetable or kitchen garden serving the house. To the north of the pond, and seemingly separate from it, was a yard with tracks and footpaths radiating out from it into the enclosed fields to the east, and with two sets of pigsties at the north-west corner. On the north side of the yard, there is a substantial E-plan farm complex; the north range had a prominent round-ended projection towards the western end, most probably a wheelhouse or horse-engine house.

2.9 Although there have been developments to both the farmhouse and farm complex by the time of the Ordnance Survey 1910 25” map, the pond remains broadly as depicted in 1854 (see figure 4). It is possible that it is slightly narrower and longer, although this may simply be a reflection of the larger scale map compared to that of 1854. What is clear is that in 1910, the northern edge of the pond is set back from the south side of the yard and is still separated from it by a wall, suggesting that the northern ramp has not yet been constructed. The pond is not specifically mentioned in the 1947 sale catalogue (ERAO DDGD/962), as being either part of the Hall’s gardens or part of the farm complex; unfortunately, the plan accompanying the catalogue does not survive.

3 ARCHAEOLOGICAL SURVEY

Introduction

3.1 The pond is described below in a logical sequence. The plan form and structure of the pond are discussed first, followed by a circulation description. Reference should also be made to the plan and profiles (see figures 5 and 6), and the photographic record which appears as Appendix 1; photographs are referenced in the following text in bold type with square brackets, the numbers before the stroke representing the film number and the number after indicating the frame e.g. [**1**/**32**].

3.2 Although it appears perfectly square in 1854 and perhaps slightly elongated in 1910, the pond as it survived at the time of the survey (December 2011) is actually slight larger across the east-west width than it is along the north-south length. Where possible, specific architectural terms used in the text are as defined by Curl (1977). Finally, in the following text, 'modern' is used to denote features or phasing dating to after c.1945.

Sutton Hall and Sutton Farm

3.3 The pond stands to the east of Sutton Hall, and at the time of the survey was separated from it by a modern post and rail fence. Sutton Hall itself is described as below in its Listing Description: '*House. 1810 with mid C18 rear wing. Brick, rendered with tile roof: rear wing of red brick with cast-tile roof. Main block of two storeys, 3 x 2 bays. Principal elevation: centre bay breaks forward slightly under low pediment. Three 16-pane sashes with sills under segmental heads. First floor: 3 similar sashes. Eaves and raking cornices to pediment which has a blocked lunette with radial glazing. Left side: 2-leaf glazed and panelled door under fanlight with radial glazing in Tuscan porch to left; 16-pane sash with sill to right. Similar sashes to first floor, all under segmental heads. Hipped roof, axial stacks. Iron lantern to porch interior. Rear range: C20 scattered fenestration to ground floor (with C20 conservatory): 16-pane sashes in boxes to first floor. Raised gable, end stack. Interior: a number of original features survive including a cut stair with edge-moulded stick balusters, fluted newel, and ramped and wreathed handrail. Most doors are of 6 beaded panels; moulded dado rail to principal rooms*.' (www.*list.english-heritage.org.uk*).

3.4 The mid 18th century rear wing forms the earlier farm house, which had the 1810 house know as Sutton Hall built onto its east end; at this time the earlier house was presumably relegated to service functions. The principal elevation of Sutton Hall [**1**/**065** and **1**/**066**] faces east towards the pond [**1**/**035**] (see plate 1), while the principal elevation on the south side faces away from the pond and the farm complex. There are two clipped yew bushes of unknown age set to the front of, and partly flanking, the central bay of the principal (east) elevation. All four elevations of the 1810 house are rendered and scored to resemble ashlar masonry; where this render has fallen away at the base of the north elevation [**1**/**067**], a brownish-cream render, similarly marked, has been revealed.

3.5 The farm complex to the north of the Hall and house retains its mid 19th century E-plan form, although the central range has been replaced by a modern shed, and much of the north half of the east range is also modern. The remainder appears to date from the first half of the 19th century, perhaps with part of the north range being of the late 18th century. The plan form as shown in the mid 19th century suggests that the farm complex was based around two open yards (see figure 3), with shelter sheds or other accommodation for beasts located in the east, central

and west ranges. The north range accommodated a cart/implement shed, granary and barn. The probable wheelhouse or horse engine house shown towards the west end of the north side of the north range has been demolished; nevertheless, the remains of an external spoked pulley wheel mounted in a bearing still survive in this location, demonstrating that latterly the wheelhouse was replaced by an external drive from a traction engine or other external power source.

The Cart Wash Pond (see figures 5 and 6)

Location, plan form and structure

3.6 The pond has an over-mature horse-chestnut tree located close to the north-east corner, and there is a row of deciduous saplings along its western edge which are causing a great deal of damage to the west side. A conifer and a deciduous tree at the south end of the fence running along but back from the west side are also causing damage to this side of the pond. There are additional deciduous saplings along the south side of the pond but these are generally not as close as those to the west, and so are currently causing less damage. The north side of the pond has been dragged out at some point after the mid 19th century, leaving an uneven north to south sloping scarp. During maintenance works being carried out to the trackway to the north of the pond, a brick/cobble pathway that appeared to lead down into the pond was apparently exposed (see Natural England brief, Appendix 3); the presence of this feature has led to suggestions that the pond was used as a cart wash in the past. The southern half of the pond retained water at the time of the survey; along the southern side, the combined depth of the standing water and leaf litter which fills the pond was c.0.50m.

3.7 At the time of the survey, due in a large part to distortion of the sides caused by the roots of adjacent trees and saplings, the pond was not quite square. It measures a maximum of 13.40m east-west by 12.60m north-south; if the scarp created by dragging out the north side is included, then the pond has a maximum north-south length of 21.40m.

Materials and circulation

3.8 The three surviving sides of the pond are all built of mortared brickwork which stood to a maximum height of c.0.90m above water level at the time of the survey [**1**/**032** and **1**/**033**] (see plate 2); they appear to have a width of between 0.30m and 0.40m. Probing with a rod established that the pond has some kind of solid base, which is set c.1.40m below the top of the pond's sides. The base appears to extend as far north as the surviving extents of the pond's east and west sides; the material used for the flooring was not exposed, but is most likely to comprise brick, flagstones or cobbles. It is assumed that both the sides and base of the pond were originally partly puddled with clay behind the brick or stonework to help retain water, as was recommended practice at this time (for example, see Johnson 1852, 734-735), although no evidence for this was noted in the course of the current survey.

3.9 Commencing at the north end of the east side of the pond [**1**/**036**], the brickwork here is visible to a maximum height of eight courses [**1**/**040**] (see plates 3 to 5). The lower six courses comprise buff/light-red handmade bricks (average dimensions 220mm by 110mm by 65mm), laid in English garden wall bond (three stretcher courses to each header course) and once pointed with a lime mortar, although this has largely leached out. The upper two courses comprise light red handmade bricks (average dimensions 220mm by 110mm by 70mm); the lower

course is mostly stretchers, while the uppermost courses comprises headers, and both are set with a thickly applied cement mortar. The uppermost course is surmounted by two pieces of flat sandstone coping, both pieces having an average depth of 0.04m and a width of 0.35m [**1**/**048**] (see plate 6). Moving south, the remainder of the east side [**1**/**036** and **1**/**041**] appears to be formed almost completely by brickwork very similar to the lower six courses described above. For the majority of the length of the wall forming the east side, a shallow offset is visible just above the water line, possibly forming a low plinth. A short section of this offset is formed by headers set on edge, and it gradually runs into the wall, disappearing some 2.40m north of the south-east corner.

3.10 The brickwork forming the south side of the pond [**1**/**037** and **1**/**046**] is visible to a maximum height of nine courses (see plate 2). The lower five courses comprise the same buff/light-red handmade bricks (average dimensions 220mm by 110mm by 65mm) described above, although here they are laid with only two stretcher courses to each header course. There then appear to be two courses of the light red bricks described above, and then a further two courses of the buff/light-red bricks; of these four courses, all are stretcher courses with the exception of the uppermost header course. The upper four courses appear to have been repointed, although this could be the result of the mortar to the lower courses having leached out. At the east end of the south side of the pond, the uppermost course is surmounted by a single piece of flat sandstone coping, measuring 1.00m long, 0.30m wide and 0.06m deep (thick) [**1**/**050**]. This coping has a central panel of chevron tooling to the upper surface surrounded by straight margin tooling. There are at least four smaller pieces of sandstone coping visible at the west end of the south side, and these appear to continue at least as far as the centre of this side, although overhanging vegetation makes it difficult to be certain. The coursing of the lower brickwork at the west end of the south side slopes markedly upwards from east to west.

3.11 The brickwork of the west side of the pond [**1**/**054** and **1**/**055**] is visible to a maximum height of between seven and nine courses. The northernmost 4.50m length of surviving brickwork comprises the same buff/light-red handmade bricks (average dimensions 220mm by 65mm by 110mm) described above, and there is also a slight offset at the base, as seen on the east side; there may also be a ragged joint at the south end of this brickwork. However, the remainder of the west side is quite different. Here, the brickwork comprises orange-red neatly moulded handmade bricks (average dimensions 220mm by 110mm by 70mm), apparently laid in English garden wall bond and set with a lime mortar. This brickwork incorporates a continuous recess or channel which extends back 0.12m from the face of the brickwork, and has an average height of 0.24m; the base of the channel was set 0.44m above water level at the time of the survey. A ceramic pipe, of 0.15m external diameter, emerges from the rear of the channel at a point c.5.05m to the north of the south-west corner of the pond.

3.12 As has already been noted above, seemingly at some point after 1910, the north side of the pond was dragged out, leaving an uneven north to south sloping scarp. The scarp is steepest to the east and west sides, where it is near vertical, but it is gentler towards the north side, measuring over 2.50m in width; it has a maximum height of 0.95m. In the centre of the base of the north side, there is modern concrete cover, 0.55m square and 0.04m thick, set on a slightly larger base of machine-made orange bricks. The top surface of the concrete cover is set c.0.50m higher than the base of the slope, and so may once have formed an inlet or overflow for the pond.

Discussion and conclusions

3.13 Although examples do exist of agricultural ponds converted to ornamental purposes, for example, the cattle pond that was incorporated into the early 19th century communal pleasure grounds at Queen Street Gardens in Edinburgh (*www.parksandgardens.ac.uk*), in its original form, the pond at Sutton Farm was most probably associated with Sutton Hall and built as an ornamental feature, rather than serving an agricultural purpose. There are several reasons for suggesting this. Firstly, the pond is located opposite the principal (east) elevation of Sutton Hall as built in 1810. The formality of the design of the pond echoes that of the Hall's principal elevation and it is likely that the two would once have been linked by gardens or pathways; it might be argued that the two clipped yew bushes between the Hall and the pond are a remnant of such an arrangement, although they are unlikely to be as early as the early 19th century. Secondly, the mid 19th century map evidence shows that the pond was physically separated from the farm complex, possibly by a brick wall, and that it was contained within a garden/orchard area to the south of the Hall. The erection of the Hall in 1810, with its principal entrance facing south, could be seen as a general re-orientation and separation of the main residence away from the farm complex to the north, and the building of the pond may have formed part of this process. Thirdly, it could be argued that the form of the pond and detailing such as the stone coping are not what would be expected for a purely agricultural feature. Fourthly, and finally, one might expect a purpose-built cart wash pond to be smaller and more rectangular in shape.

3.14 If the above proposal is correct, then when is the pond most likely to date from? It was clearly present by the mid 19th century, and one possibility is that it is contemporary with the Hall i.e. built around 1810. The early 19th century was a period of transition in garden design, with a gradual shift away from the open, Picturesque landscape settings of the 18th century towards a formality that was to culminate in the grandiose bedding-out of the mid to late 19th century (Taylor 1952, 19-42; Jackson-Stops 1992, 132-133). In the 1820s, fashionable villas, even in semi-urban locations, were still being built so as to appear in a miniature English Picturesque setting, creating the impression of standing alone within a park even if they did not (Arnold 1996, 110-111). Unfortunately, there is less published information on the immediate setting of such houses in rural locations. It is noticeable on the 1st edition 6" map that the coniferous and deciduous planting shown along the eastern boundary of the garden/orchard area terminates at the pond, and there may therefore have been a view from the windows of the principal front across the pond into the more open agricultural land to the east. However, it is also possible that the pond was a slightly later addition to the Hall, forming part of a more formal layout to the east. The pond may have performed several different functions; for example, mid 19th century gardening writers recommended the collection of rain water in open cisterns (Loudon 1851, 55), and goldfish were also being kept in garden ponds by the mid 19th century (Johnson 1852, 735).

3.15 In its original form, the pond was probably very slightly sub-square, measuring 13.5m by 13.0m. Its sides were vertical, but rose from a shallow plinth, and were built of buff/light-red handmade bricks (average dimensions 220mm by 110mm by 65mm), laid in English garden wall bond and pointed with a lime mortar. The sides were surmounted by flat sandstone coping, and the total depth of the pond from the top of the sides to a presumably brick or flagstone base was between 1.20m-1.40m, although the depth of water would obviously have been slightly less than this. The original source of water for the pond is not known, but it is unlikely to have been the pipe which emerges from the west side (see below). Rainwater may have been piped from the gutters on the Hall. Similarly, it is not known if there

was an original outlet and where this was located. The excavation and cleaning out of the pond during the proposed restoration works may provide further information.

3.16 The pond preserves evidence of several episodes of repair or rebuilding. That visible at the north end of the east side probably resulted from the upper courses of the brickwork and the stone coping being reset, rather than the side of the pond being raised. On the other hand, the majority of the west side was completely rebuilt at some point. The purpose of the channel in the rebuilt west side is not known. It is probable that the repair and rebuilding works largely date from the period when the pond still fulfilled an ornamental function. At an unknown date after 1910, the north side of the pond was crudely dragged out, and it is possible that a ramp of some kind was built down into it from the farmyard area to the north. The most likely purpose for this would have been to allow cattle to drink. Several circular and rectangular ponds with brick ramps were identified on the Beninigbrough Hall estate, and these are though to have been for stock access; in some cases, the ramps were added to an existing pond (Dennison & Richardson 2005, 32).

3.17 Although it is *possible* that carts could have been driven into the pond to be washed after a ramp was built, it is highly unlikely that the pond was specifically converted into a cart wash. Such structures appear to have been uncommon, and they are not well covered in either contemporary agricultural manuals (for example, Wilson 1848; Strickland 1812), or secondary publications dealing with farmsteads (Barnwell & Giles 1997; Brigden 1986) and carts (Viner 2008). It would seem more probable that only the largest model farms or those using substantial numbers of wheeled vehicles would have constructed purpose-built examples, but even these are generally not recognised (e.g. Wade Martins 2002); smaller farms such as Sutton Farm would normally make use of a local ford or shallow watercourse to wash carts when necessary. Ironically, such practices could lead to the construction of a cart wash, such as that built in 1832 in Chipping Campden following complaints that washing in a stream was contaminating the village's water supply, although this appears to have served the whole community rather then being associated with a specific farm or landowner (*www.cotswoldnews.com*).

3.18 The pond has evidently continued to hold water into the modern period, as demonstrated by the concrete overflow built into the base of the north side. However, it has not been well maintained, and the east and west sides in particular have been badly affected by the roots of adjacent trees.

4 WILDLIFE SURVEY

Introduction

4.1 The following text provides a summary of the results of the Wildlife Survey undertaken by EINC in May-June 2011. The full unedited report (Holloway 2011) appears as Appendix 2.

Phase 1 Habitat Survey (see figure 7)

Target Note 1 (the cart wash pond)

4.2 The brick walls forming the east, south and west elevations of this small rectangular pond have deteriorated along parts of their lengths and were partially covered in ivy *Hedera helix* and the overhanging vegetation of nearby sycamore *Acer pseudoplatanus* and horse chestnut *Aesculus hippocastanum* trees. This deterioration was particularly evident at the north edge of the east elevation where a little further to the north the bank was supported by the large roots of a mature horse chestnut *Aesculus hippocastanum*.

4.3 The shallow, gently sloping pond edge of the northern side forms the presumed entrance to the cart wash pond. The bed of the pond was covered by a thick, black, anaerobic, sediment which, as the water dried out during the duration of the survey (16 May-28 June 2011), became more and more exposed along its northern edge. Moving from north to south the water depth above the sediment gradually increased to a maximum of c.0.35m. At the same time the thickness of the sediment increased from a level which was safe to wade through (up to c. 0.3m) to an estimated thickness of 0.4m-0.5m. A moorhen nest was recorded within the open water at the north-west corner.

4.4 Tall ruderals fringed the 'natural', northern edge of the pond with frequent nettle *Urtica dioica*, Russian comfrey *Symphytum x uplandicum*, cleavers *Galium aparine*, great willowherb *Epilobium hirsutum* and cow parsley *Anthriscus sylvestris*. Other plants recorded here included dame's-violet *Hesperis matronalis*, clustered dock *Rumex conglomeratus,* pendulous sedge *Carex pendula,* spear thistle *Cirsium vulgare* and feverfew *Tanacetum pathenium*. The tall ruderals give way to regularly cut grass adjacent to the track. Ephemeral, annual plants recorded here included shepherd's-purse *Capsella bursa-pastoris* and wavy bitter-cress *Cardamine flexuosa.* A rabbit was also recorded in this area on the date of survey (16 May 2011). Dense scrub (refer to Target Note 2; see below), a line of leylandii *Cupressus x leylandii spp.* trees and a narrow band of broadleaved woodland (Target Note 3) fringed the west, south and eastern edges of the pond respectively.

Target Note 2 (dense scrub)

4.5 A narrow length of dense scrub fringes the western edge of the pond. Trees and shrubs recorded were holly *Ilex aquifolium*, yew *Taxas baccata*, leylandii *Cupressus x leylandii spp.*, elder *Sambucus nigra*, hawthorn *Crataegus monogyna* and sapling sycamore *Acer pseudoplatanus*.

Target Note 3 (broadleaved woodland, veteran tree and remnant woodland ground flora)

4.6 A small band of mature sessile oak *Quercus petraea* and horse chestnut *Aesculus hippocastanum* occupied the narrow band of land to the east of the pond. Trees and shrubs in the understorey and field layers included sycamore *Acer pseudoplatanus*, holly *Ilex aquifolium*, yew *Taxa baccata*, elder *Sambucus nigra* and rose *Rosa spp.* Patches of bramble *Rubus fruticosus* occurred in the field layer whilst woodland herbs in the ground layer were frequent bluebell *Hyacinthoides non-scripta* and common bent *Agrostis capillaries.* Other more occasional woodland plants recorded amidst the abundant leaf litter and fallen twigs were herb bennett *Geum urbanum,* wood anemone *Anemone nemorosa*, wood forget-me-not *Myosotis sylvatica*, garlic mustard *Alliaria petiolata* ivy *Hedera helix* and seedling holly *Ilex aquifolium*, sycamore *Acer pseudoplatanus* and horse chestnut *Aesculus hippocastanum*.

4.7 The large circumference and diameter of the over-mature horse chestnut *Aesculus hippocastanum*is tree at the north-eastern edge of the pond are indicative characteristics of a veteran tree (Reed 2000, Appendix 2); T1 on figure 7. Assessing the age of such a tree, however, is not an easy task and is usually, at best, an estimate. Nevertheless, using a system developed by White (1998) provides one of the best estimates of age available. White's system is based on tree girth and core development and he notes that great care is needed when deciding which site category a tree should be placed when determining its rate of growth. He identified seven categories: champion tree potential (ideal site conditions); good site (open grown, sheltered), average site (garden, parkland); churchyard; poor ground and/or some exposure; woodland boundary pollard (or open woodland); and inside woodland. From observed conditions on site the large horse chestnut was categorised as a tree which had mostly grown in either a good or average site. On this basis the tree is estimated to be between 263-319 years old and so can be categorised as a veteran tree. It is therefore likely that the tree was planted (or self-seeded) at some point in the early 18th century. However, it must be noted that determination of site history is often a matter of some speculation, and that the current conditions surrounding the tree may not have prevailed many years ago when it was young.

4.8 Finally, research indicates that, although relatively common, four of the herbs recorded in the nearby vicinity are ancient woodland ground flora indicator species namely wood anemone *Anemone nemorosa*, herb bennett *Geum urbanum*, bluebell *Hyacinthoides non-scripta* and wood forget-me-not *Myosotis sylvatica.*

Target Note 4 (broadleaved woodland)

4.9 Sessile oak *Quercus petraea* dominates the canopy of this broadleaved woodland with occasional horse chestnut *Aesculus hippocastanum* and sycamore *Acer pseudoplatanus*. A similar understorey and field layer to that described in Target Note 3 above was recorded although additional shrubs included non-native rhododendron *Rhododendron ponticum* and snowberry *Symphoricarpus albus*. Woodland herbs such as bluebell *Hyacinthoides non-scripta*, wood anemone *Anemone nemorosa* and herb bennett *Geum urbanum* were, however, generally absent from the ground flora. Instead the ground flora had frequent daffodil *Narcissus pseudonarcissus*, ground elder *Aegopodium podagraria*, cleavers *Galium aparine*, cow parsley *Anthriscus sylvestris* and nettle *Urtica dioica*.

Target Note 5 (tall ruderals and occasional mature trees)

4.10 A single mature beech *Fagus sylvatica,* semi-mature sycamore *Acer pseudoplatanus* and sapling cherry *Prunus spp.* were recorded on the opposite edge of the track, just to the north of the pond. Most of this land, however, was occupied by a band of tall ruderals. Frequent herbs and grasses were cock's-foot *Dactylis glomerata*, creeping bent *Agrostis stolinifera*, soft-brome *Bromus hordaceus,* nettle *Urtica dioica*, hogweed *Heracleum sphondylium*, white dead-nettle *Lamuim album*, cow parsley *Anthriscus sylvestris*, creeping buttercup *Ranunculus repens*, dandelion *Taraxacum spp.* and Russian comfrey *Symphytum x uplandicum*. Occasional plants recorded included wood dock *Rumex sanguineus*, ribwort plantain *Plantago lanceolata*, common mouse-ear *Cerastium fontanum* silverweed *Potentilla anserine* and scented mayweed *Matricaria recutita.*

Target Note 6 (mixed plantation)

4.11 A narrow strip of mixed broadleaved and conifer plantation occupies this location. Densely spaced beech *Fagus sylvatica*, sycamore *Acer pseudoplatanus* and Scots pine *Pinus sylvestris* were recorded with a sparse understorey of elder *Sambucus nigra* and holly *Ilex aquifolium*.

H1 (Overgrown hedgerow)

4.12 A small length of overgrown hedge fringes the eastern border of the narrow woodland at this location. The hedge is composed of holly *Ilex aquifolium* and sapling/semi-mature sycamore *Acer pseudoplatanus* (generally over 5m tall) with occasional seedlings of yew *Taxas baccata.*

H2 (Planted hedgerow)

4.13 A young hedge, interspersed by tall ruderal vegetation, had recently been planted between the two fences at this location. All the trees and shrubs were less than 1.5m tall and included holly *Ilex aquifolium*, hazel *Corylus avellana*, blackthorn *Prunus spinosa*, hawthorn *Crataegus monogyna* and elder *Sambucus nigra*. Seedling horse chestnut *Aesculus hippocastanum* and sycamore *Acer pseudoplatanus* were also recorded. Tall ruderals recorded included garlic mustard *Alliaria petiolata*, cleavers *Galium aparine*, dame's-violet *Hesperis matronalis*, nettle *Urtica dioica*, feverfew *Tanacetum pathenium*, herb Robert *Geranium robertianum* and Russian comfrey *Symphytum x uplandicum*.

H3 (Hawthorn hedge)

4.14 Hawthorn *Crataegus monogyna* dominated hedgerows, c.2.5m-3.5m tall, bordered the cattle-grazed pasture to the east of the cart wash pond. Other trees and shrubs recorded within these hedgerows included sycamore *Acer pseudoplatanus*, elder *Sambucus nigra* and holly *Ilex aquifolium*.

Great Crested New Survey

4.15 No great crested newt eggs (or eggs from any other newt species) were found during the two egg surveys. In addition, no adult newts (or amphibians of any species) were recorded during the four torch and three bottle trap surveys. Nevertheless, numerous water fleas (order *Copepoda)* were recorded within the water together with occasional water beetles (order *Coleoptera),* greater water boatman (family *Notonectidae)* and leeches (class *Hirudinea).*

Other Fauna

Birds

4.16 A total of 11 bird species were recorded in the vicinity of the pond during the Phase 1 Habitat Survey and Great Crested Newt Survey. These are as follows:
Blackbird (general vicinity of the cart wash pond);
Bullfinch (pair recorded in the species-rich hedgerow beside Southwood Road);
Greenfinch (hedgerow - to the east of cart wash pond);
Grey partridge (pair recorded in the fields beside Southwood Road);
Moorhen (nest recorded within the cart wash pond);
Robin (general vicinity of the cart wash pond);
Song thrush (fields to the north and east of the cart wash pond);
Stockdove (hedgerow north of the cart wash pond);
Swallow (flying over the cart wash pond);
Wood pigeon (fields north and east of the cart wash pond);
Yellowhammer (hedgerow - to the east of cart wash pond on 16/5/11).

Mammals

4.17 Rabbits were recorded at the northern edge of the cart wash pond.

Wildlife Value Of Sutton Farm Cart Wash Pond

4.18 The various criteria used to determine and assess the value, sensitivity and importance of the cart wash pond and its environs, in terms of wildlife and ecology, are discussed fully in Appendix 2.

Habitats

4.19 The tall ruderal habitat on the northern margin of the pond is virtually ubiquitous throughout the lowlands of Britain and the key factor in its development is the irregularity of any grazing and/or cutting. The presence of mature and sapling trees and shrubs adjacent to the east, west and south of the pond was further evidence for the lack of any recent management. Most of the species recorded here are widespread throughout the UK and little change has occurred in their overall distribution since the 1962 Atlas (Preston *et al* 2002).

4.20 The ecological value of the pond is limited by the fact that three of its banks are walled. In addition, heavy shading has precluded the development of any aquatic, submerged or marginal wetland flora, and a thick layer of sediment has built up on the pond floor. Nevertheless, the open water and the mosaic of adjacent natural habitats recorded provide a refuge and breeding habitat for a range of invertebrates, small mammals and birds. This includes foraging habitat for protected species such as bats and also the nesting of water-related bird species such as moorhens.

4.21 Further ecological (and historical) value to the pond is provided by the likely veteran horse chestnut *Aesculus hippocastanum* tree on its north-eastern edge. This over-mature tree provides conditions suitable for a wide range of other plants and animals, many of which require the very special environment created in such an old tree. In addition, its roots contribute to the small section of natural bank here which will support the terrestrial life stages of aquatic invertebrates as well as bank dwelling small mammals. Finally, four ancient woodland herb indicator species were also recorded in the remnant woodland ground flora at this location.

4.22 As a result, the mosaic of habitats within and immediately adjacent to the cart wash pond are considered to be of low local (Parish) ecological value.

Fauna: Great Crested Newts (protected species)

4.23 Evidence from the survey indicates that great crested newts (and all other amphibian species) are absent from the cart wash pond. The importance of the pond as an amphibian breeding site was therefore categorised as negligible (Swan & Oldham 1993).

5 MITIGATION MEASURES FOR RESTORATION

Introduction

5.1 The archaeological and wildlife surveys described above were undertaken to provide baseline data with which to inform any future restoration of the pond. It should be accepted that any restoration should respect the significance and importance of the pond, and that it should not result in a major impact on the historic farmstead.

5.2 When considering the restoration of the pond, a number of factors are likely to be required. These are expected to include:

- the draining of the pond and the removal of silt;
- the cleaning of the base and sides of the pond to reveal any lining or flooring material;
- the exposure and renovation of the brick revetment walls (including wholesale repointing and partial rebuilding where necessary);
- the replacement and/or renewal of the coping stones;
- the exposure, renewal and/or replacement of any water supply and drainage mechanisms;
- the removal of intrusive vegetation from the edges of the pond.

5.3 An appropriately qualified conservation architect, familiar with the techniques and methods of repairing and conserving historic buildings and structures, will be required to draw up the necessary specification of work and supervise the restoration while it is being undertaken.

5.4 Nevertheless, the data gathered from the archaeological and wildlife surveys can be used to propose various oversight and mitigation works before and during any proposed restoration.

Archaeological Mitigation Measures

5.5 The existing archaeological survey provides an appropriate 'pre-intervention' survey of the pond. However, it is to be expected that additional features associated with the water supply and drainage system, the brick revetment walls and the lining of the pond will be uncovered during any proposed restoration works. In order to properly record and protect any archaeological features or deposits, the following archaeological mitigation measures are recommended:

- Ensure that all ground works associated with the cleaning out of the pond is done under archaeological supervision, and ensure that adequate time and resources are allowed for any necessary recording work (drawn, photographic and/or descriptive records).

- Thoroughly search the vegetation surrounding the pond for any additional pieces of coping stone and brick, and, if salvageable, set them aside for re-use.

- Carefully scrape off the vegetation and soil from the tops of the brick revetment walls, to reveal any partially buried coping stones or brickwork.

- Undertake an initial cleaning of a selected part of the sloping north side of the pond, to determine the presence or absence of any cobbling or brickwork

forming the ramp. The presence of any such material might influence the methodology employed in empting out the pond.

- Undertake an initial cleaning of a selected part of the base of the pond, to determine the presence or absence of any lining or flooring. The presence of any such material might influence the methodology employed in empting out the pond (e.g. it may not be strong enough to support heavy machinery).

- Assuming that the northern ramp can be used for access (but avoiding the area of the modern outflow), ensure that the pond is cleaned out from north to south. Do not use machinery on or around the west, south or east sides of the pond, where the additional weight might damage or collapse the revetment walls. See nature conservation mitigation measures for the disposal of the spoil.

- Ensure that any repointing of the original brick walls is done with an appropriate lime mortar mix. Also ensure that any rebuilding is done to match the original bond and patterning.

Nature Conservation Mitigation Measures

5.6 In order to retain and enhance the existing nature conservation features of the pond during the proposed restoration, the following nature conservation mitigation measures are recommended:

- Determine the timing of the proposed restoration work by the ground conditions. Dry autumn and early winter conditions (August-October) or 'drought' years offer the greatest scope. Generally, the ground is wet and soft during much of the winter, which may result in machinery getting stuck. In spring, there is a potential for disturbance to wildlife.

- Protect and retain *in situ* the veteran horse chestnut *Aesculus hippocastanum* tree located at the north-east corner of the pond, and the woodland ground flora adjacent to the eastern edge of the pond. Also ensure that the exposed root system of this tree is appropriately protected from the works and carefully integrated into the restored banks. To this end, enclose the strip of land to the east of the pond with temporary fencing so that it cannot be accessed by any heavy excavation machinery or dumper trucks.

- Unless brick faces are to be rebuilt, do not scrape off any ferns, mosses etc. Where necessary, repoint around them.

- To avoid losing all the existing pond life, use old tanks/baths etc to store animal material (pond life) on site while restoration proceeds. Put them back when the water has cleared, within a few weeks of completion.

- Ensure that any sediment that is removed from the pond is not dumped in any of the adjacent habitats i.e. the tall ruderal, hedgerow or woodland habitats described in Target Notes 2 to 6 above (Chapter 4). The silt should instead be stored on nearby hard standing until it has dried out and oxygenated. It is likely to be nutrient-rich and could therefore be used on arable land or gardens as 'top soil'.

- Remove the tall ruderals that currently fringe the northern edge of the pond (refer to Target Note 2) and place them in the tall ruderal area located to the north of the track (described in Target Note 5).

- Ensure that all the materials required to rebuild the pond walls are not stored on any of the adjacent habitats i.e. the tall ruderal, hedgerow or woodland habitats described in Target Notes 2 to 6. All such materials should instead be stored on nearby hard standing.

- Remove the line of leylandii *Cupressus x leylandii spp.* trees on the south side of the pond, coppice the dense trees/shrubs fringing the western edge of the pond, and remove all the overhanging branches of adjacent trees. Log piles should be left as deadwood refuges in the woodland to the south of the pond (described in Target Note 4). The aim here is to allow a much greater degree of sunlight to reach the water surface of the restored pond and so enhance its overall biodiversity potential; for example, common frogs are known to usually spawn in warm shallow water, close the shoreline (Gent & Gibson 1998).

- Remove the non-native rhododendron *Rhododendron ponticum* and snowberry *Symphoricarpus albus* shrubs from the woodland to the north of the pond.

- Plant a range of native marsh water's-edge and submerged aquatic plants to help maximise and enhance the diversity of habitat potential when restoring the pond. The aim is to make the restored pond much more habitable to a wider range of animals, notably damselflies and dragonflies, as well as amphibians. To this end, the following planting measures are recommended:

    i) ensure that the gently sloping waterlogged ground at the northern edge of the pond is planted with a native range of marsh plants - these may include meadowsweet *Filipendula ulmaria*, ragged robin *Lychnis flos-cuculi*, soft rush *Juncus effusus*, water forget-me-not *Myosotis scorpioides*, various appropriate sedges, marsh marigold *Caltha palustris* and water mint *Mentha aquatica*.

    ii) in selected shallows near the northern edge of the pond also plant water's-edge plants such as yellow iris *Iris pseudacorus*, water horsetail *Equisetum fluviatile*, lesser spearwort *Ranunculus flammula*, water-cress *Rorippa nasturtium-aquaticum*, amphibious bistort *Polygonum amphibian*, water plantain *Alisma plantago-aquatica* and common clubrush *Eleocharis palustris*.

    iii) ensure that the pond is inoculated with a range of native submerged aquatic plants to provide much-needed oxygen into the water and also to provide structures under the water for aquatic fauna. These should include water-starwort species *Callitriche spp,* common water-crowfoot *Ranunculus aquatilis* and spiked water-milfoil *Myriophyllum spicatum.* Avoid planting water lilies which spread very fast and tend to smother a small pond, such as the cart wash pond, over long periods.

- Ensure that a suitably qualified ecologist or wildlife specialist is 'on call' to respond to any queries or problems experienced on site during the restoration works.

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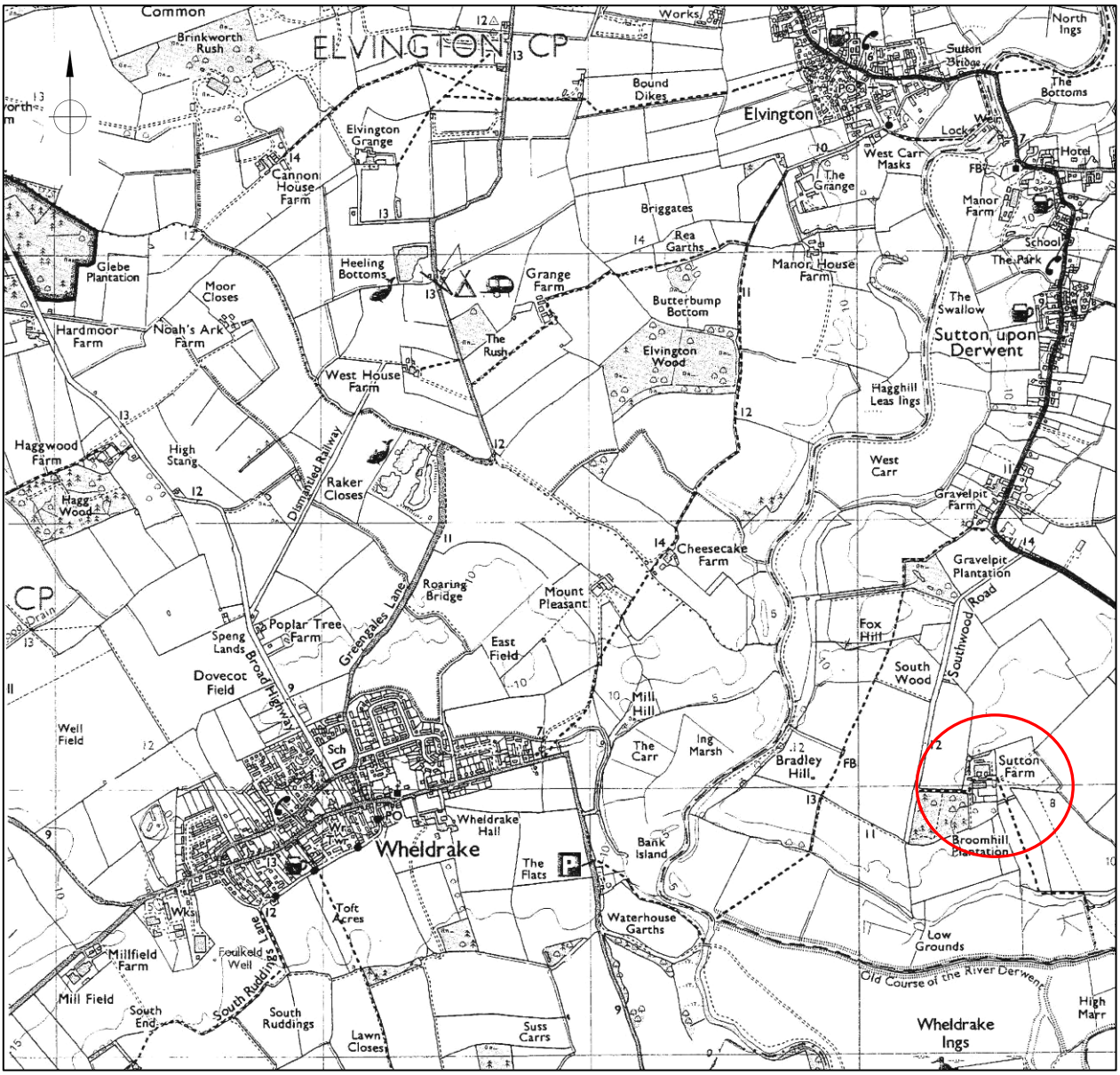
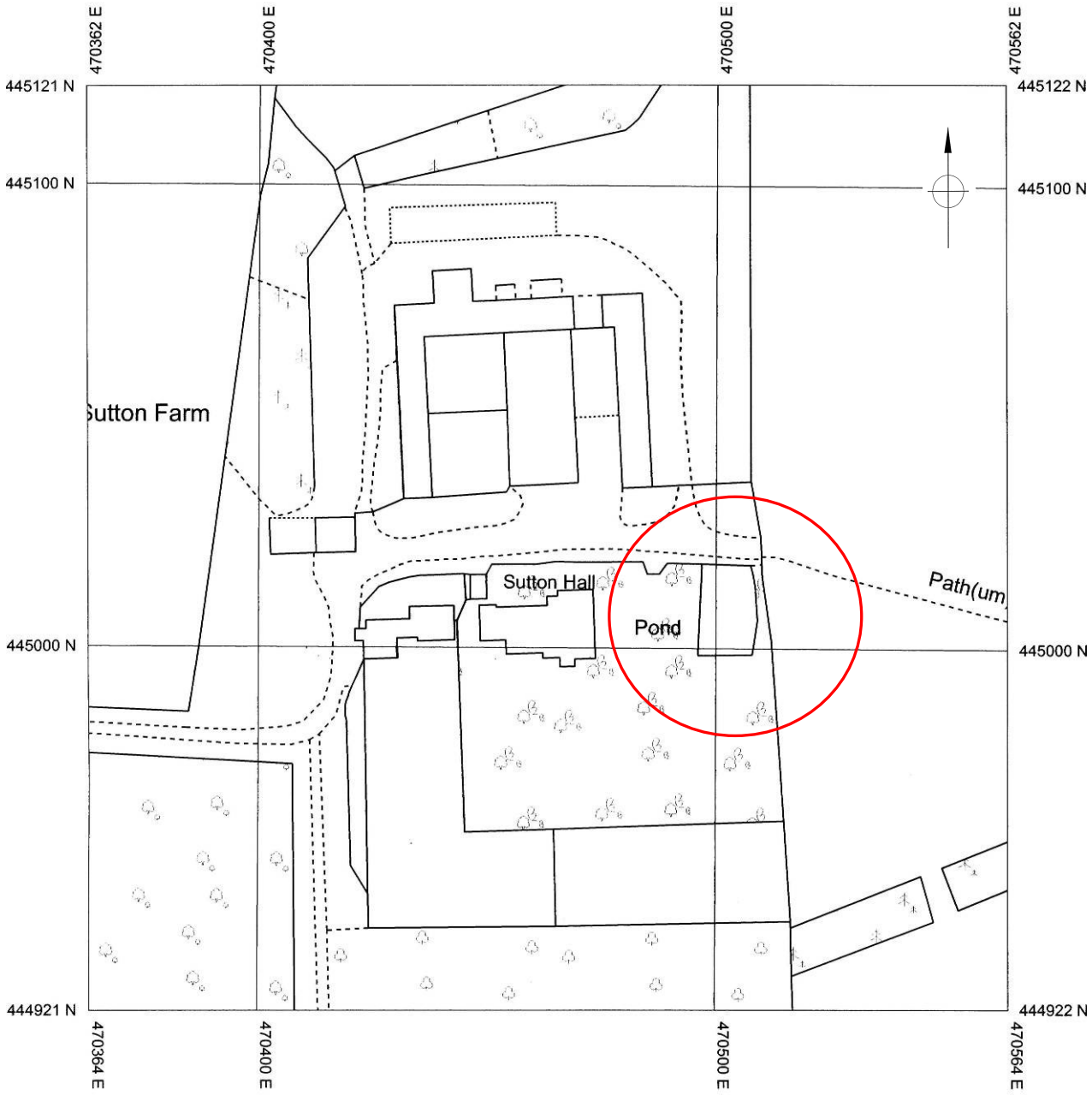
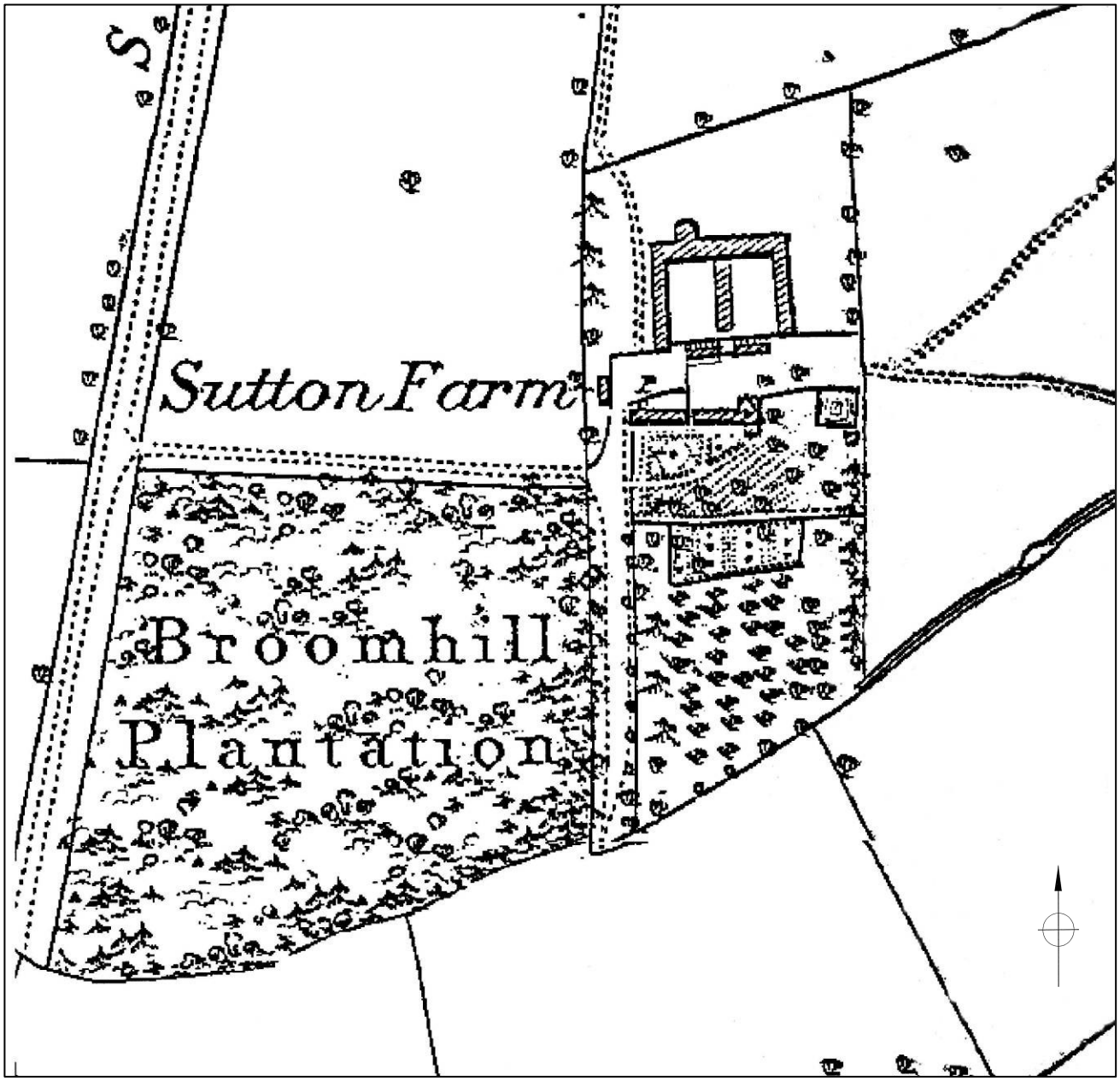
7.2 The archaeological survey was undertaken by Shaun Richardson, assisted by Richard Lamb. Shaun Richardson also produced the site archive and a draft report. The wildlife survey was undertaken by Dr Madeline Holloway of Ecological Information Network Consultants (EINC), who produced the stand-alone wildlife report. The final report was produced and edited by Ed Dennison of EDAS, with whom the responsibility for any errors remains.



PROJECT	
SUTTON FARM POND	
TITLE	
GENERAL LOCATION	
SCALE	DATE
NTS	JAN 2012
EDAS	FIGURE 1

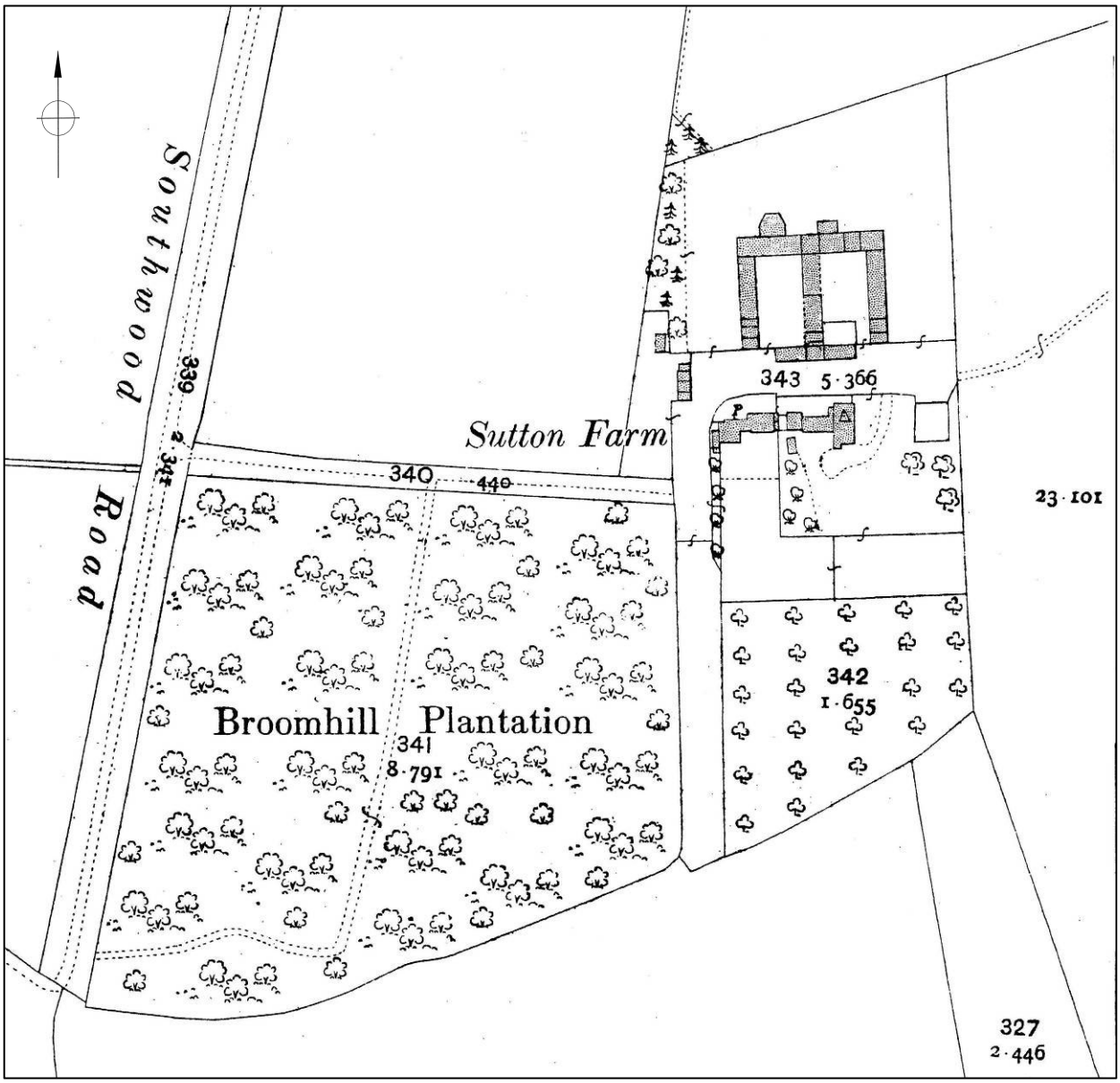


PROJECT: SUTTON FARM POND	
TITLE: LOCATION OF POND	
SCALE: NTS	DATE: JAN 2012
EDAS	FIGURE: 2



Ordnance Survey 1854 6” map
(sheet 192).

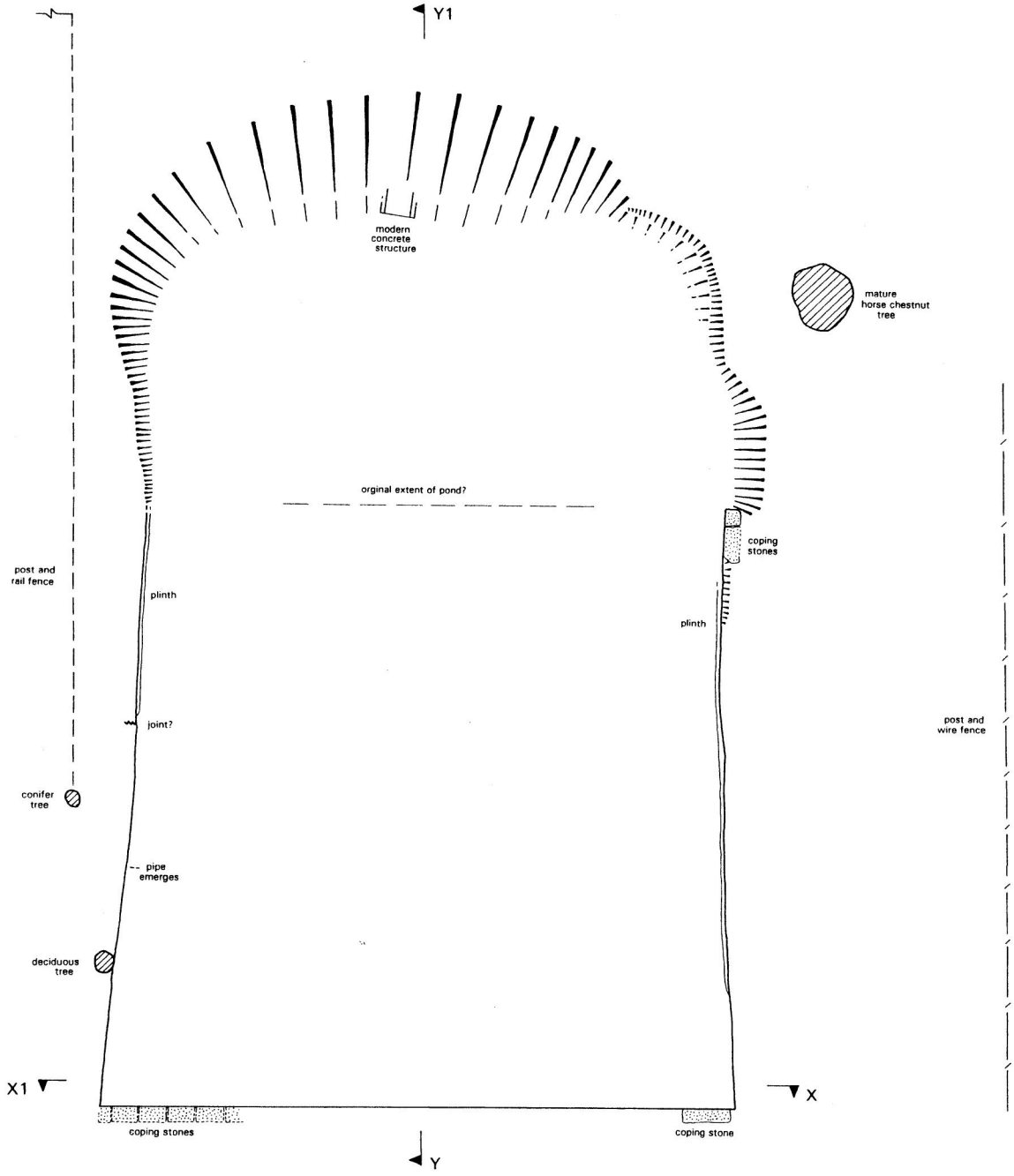
PROJECT: SUTTON FARM POND	
TITLE: ORDNANCE SURVEY 1854 MAP	
SCALE: NTS	DATE: JAN 2012
EDAS	FIGURE: 3

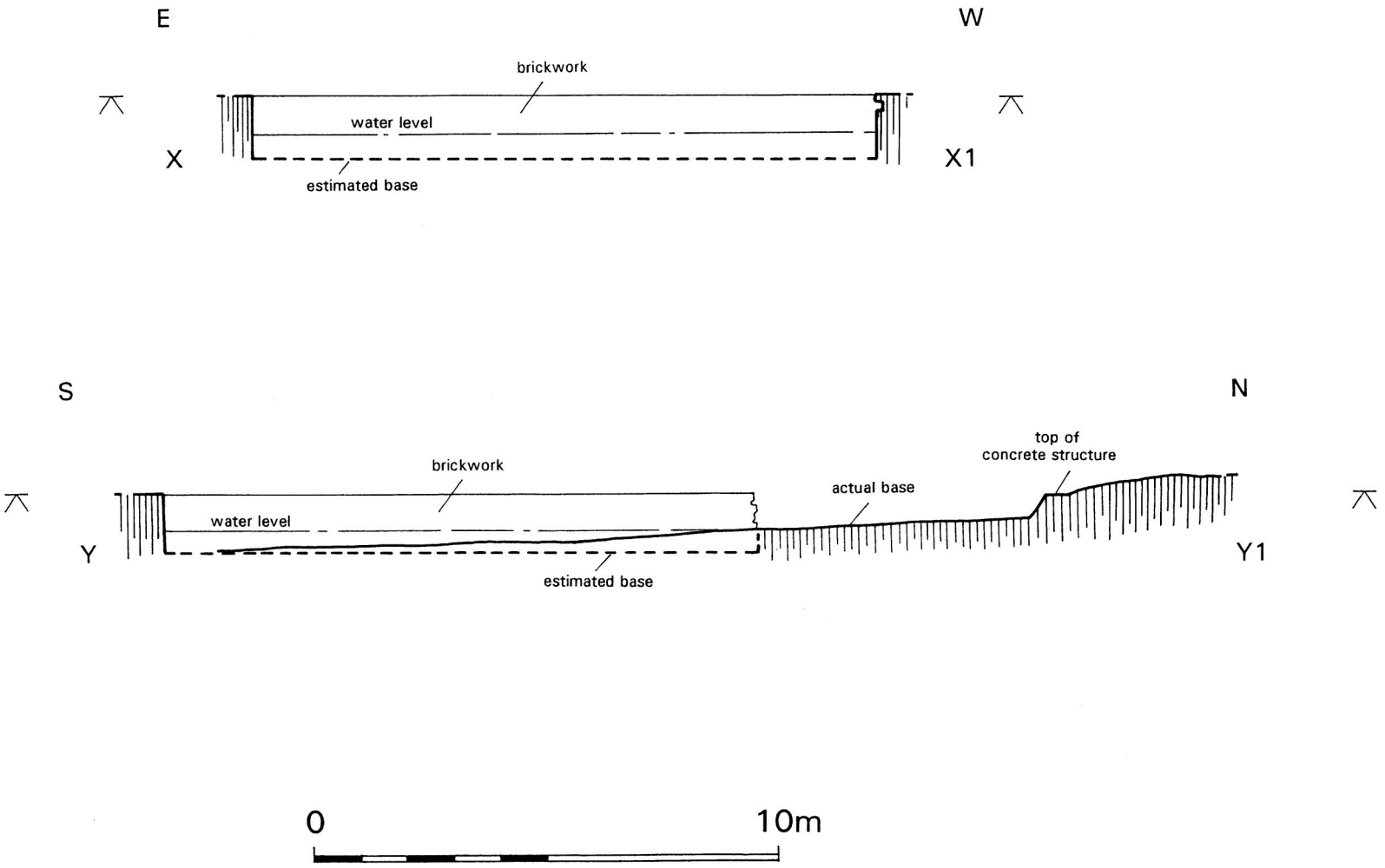


Ordnance Survey 1910 25" map
(sheet 192/10).

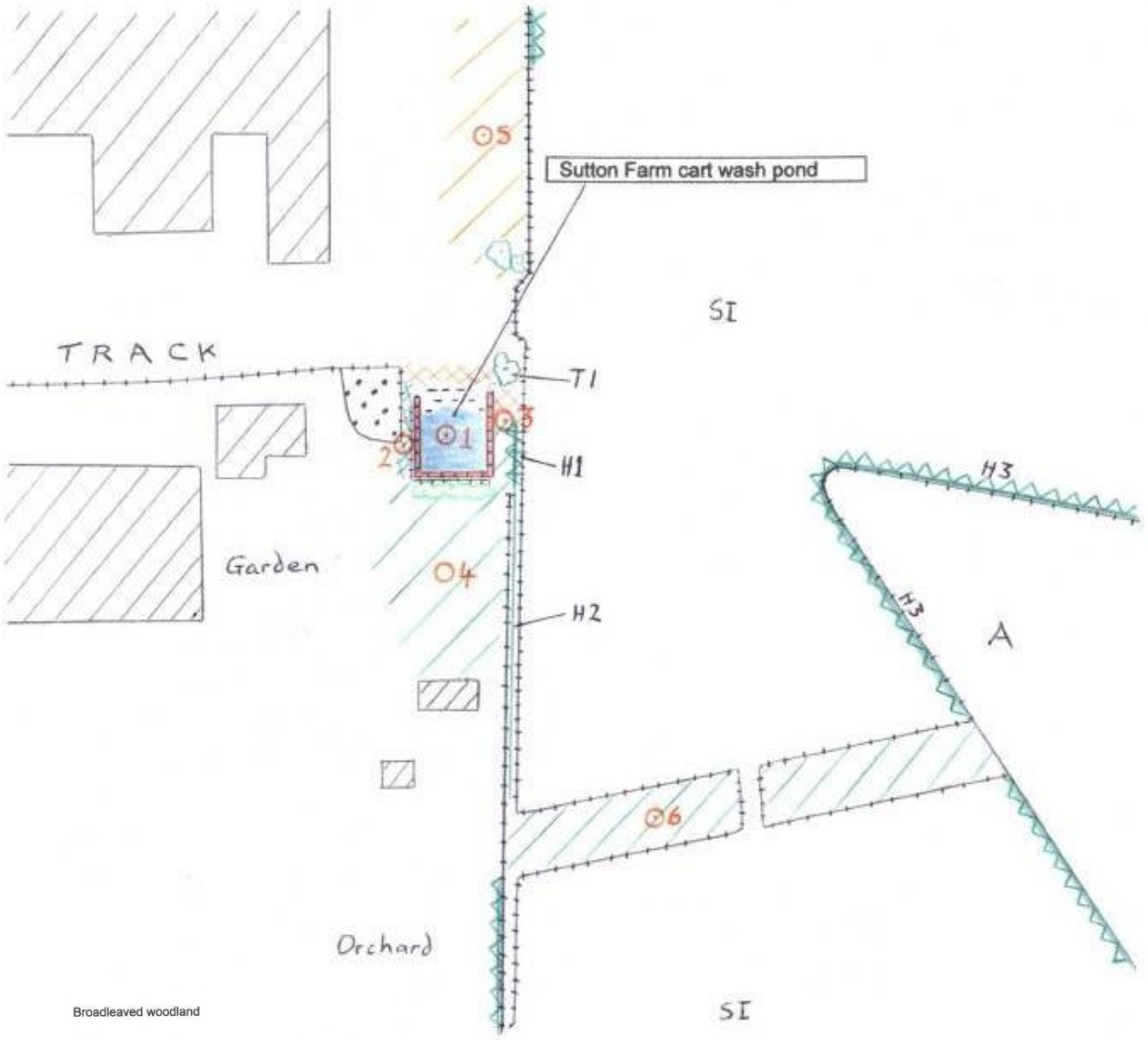
PROJECT: SUTTON FARM POND	
TITLE: ORDNANCE SURVEY 1910 MAP	
SCALE: NTS	DATE: JAN 2012
EDAS	FIGURE: 4

PROJECT	
SUTTON FARM POND	
TITLE	
PLAN	
SCALE	DATE
AS SHOWN	JAN 2012
EDAS	FIGURE 5





PROJECT	SUTTON FARM POND
TITLE	SECTIONS
SCALE: AS SHOWN	DATE: JAN 2012
EDAS	FIGURE: 6



- Broadleaved woodland
- Dense scrub
- Scattered scrub
- Individual mature tree
- Line of leylandii *Cupressus x leylandii spp.*
- Young hedgerow
- Overgrown hedgerow
- Hawthorn dominated hedgerow
- Tall ruderals (nettles *Urtica dioica*, tall grasses etc.)
- Open water
- Exposed sediment
- SI — Cattle-grazed, species-poor, pasture
- A — Arable
- Brick wall
- Fence
- Building
- Gravel
- Target Note

PROJECT: SUTTON FARM POND	
TITLE: WILDLIFE SURVEY	
SCALE: NTS	DATE: JAN 2012
EDAS	FIGURE: 7

Plate 1: Principal (east) elevation of Sutton Hall, looking SW (photo 1/65).

Plate 2: Pond, looking S (photo 1/32).

Plate 3: Pond, looking SE (photo 1/36).

Plate 4: Stone coping and brickwork at north end of east side of the pond, looking E (photo 1/40).

Plate 5: East side of pond, looking SE (photo 1/41).

Plate 6: Stone coping at north end of east side of pond,
looking W (photo 1/48).

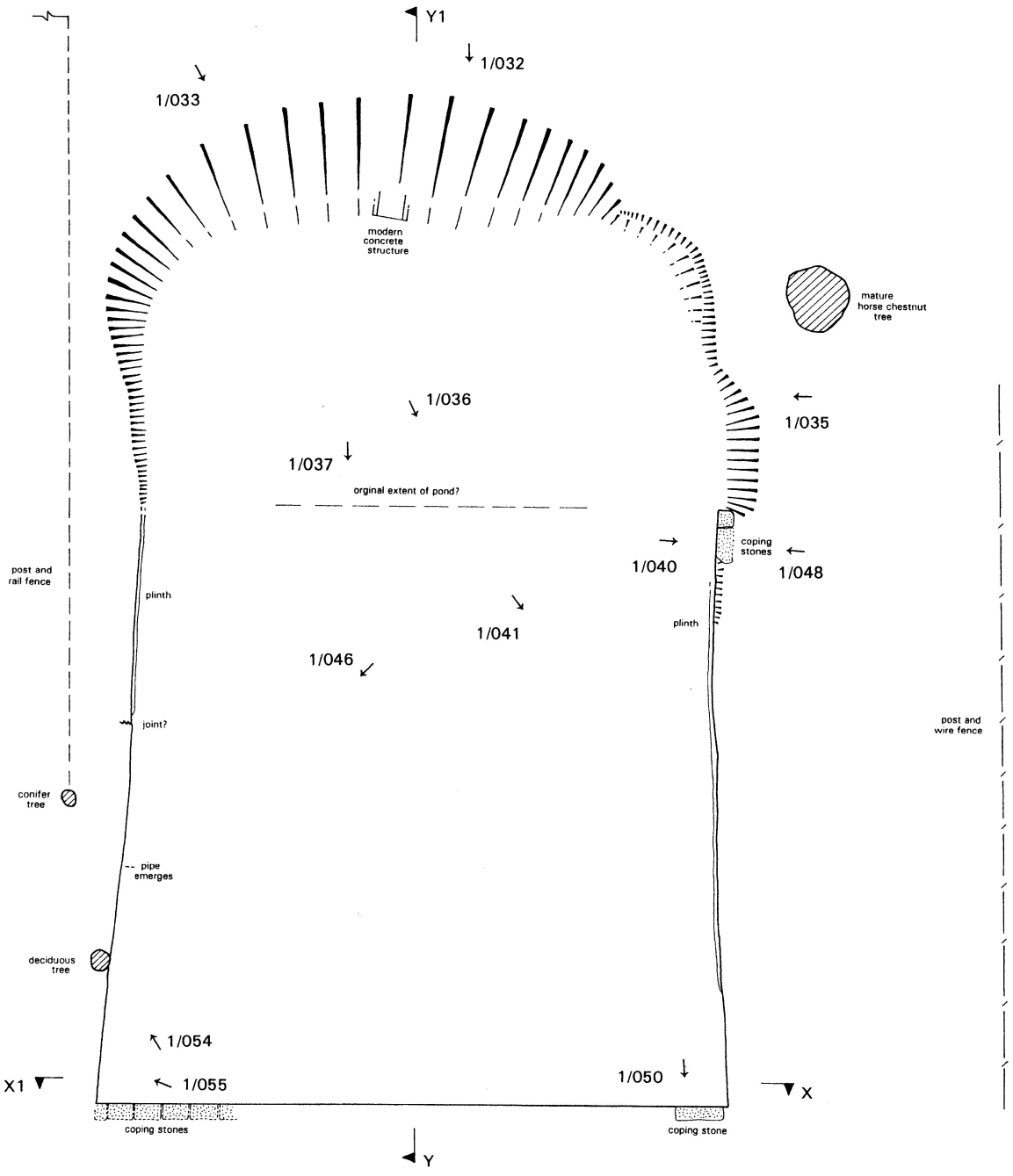
APPENDIX 1
PHOTOGRAPHIC RECORD

Sutton Farm Pond Photographic Catalogue

Film 1: Digital colour photographs taken 16th December 2011

Film	Frame	Subject	Scale
1	032	Pond, looking S	1m
1	033	Pond, looking SE	1m
1	035	Pond with Sutton Hall, looking W	-
1	036	Pond, looking SE	1m
1	037	Pond, looking S	1m
1	040	N end of E side of pond, with stone coping, looking E	1m
1	041	E side of pond, looking SE	-
1	046	Pond, looking SW	-
1	048	N end of E side of pond, stone coping, looking W	0.50m
1	050	E end of S side of pond, stone coping, looking S	-
1	054	Typical section of S part of W side, at SW corner, looking NW	-
1	055	Typical section of S part of W side, at SW corner, looking NW	-
1	063	W elevation of W range, looking S	-
1	065	Principal (E) elevation of Hall, looking SW	-
1	066	Pediment to principal (E) elevation of Hall, looking SW	-
1	067	N elevation of Hall, looking S	-

PROJECT	
SUTTON FARM POND	
TITLE	
PHOTOGRAPHIC LOCATIONS	
SCALE: AS SHOWN	DATE: JAN 2012
EDAS	FIGURE: A1/1



1/063 DIRECTION OF PHOTOGRAPH WITH FILM AND PHOTO NUMBER

0 10m


1-032.JPG


1-033.JPG


1-035.JPG


1-036.JPG


1-037.JPG


1-040.JPG


1-041.JPG


1-046.JPG


1-048.JPG


1-050.JPG


1-054.JPG


1-055.JPG


1-065.JPG


1-066.JPG


1-067.JPG

APPENDIX 2
WILDLIFE SURVEY

CART WASH POND, SUTTON FARM
SUTTON-UPON-DERWENT
EAST YORKSHIRE

Wildlife Report

January 2012

Dr. Madeline Holloway, 19 Farfield Road, Shipley, Bradford BD18 4QP
Phone/Fax 01274 598839 e-mail: holloway597@btinternet.com

SUTTON FARM CART WASH POND

WILDLIFE REPORT

CONTENTS

APPENDICES

1 INTRODUCTION

1.1 EINC was commissioned in May 2011 by Ed Dennison Archaeological Services Ltd. (EDAS), to undertake a wildlife report for the proposed restoration of the cart wash pond at Sutton Farm, Sutton-upon-Derwent, East Yorkshire. The proposed restoration work would include the draining, cleaning and restoration of the basic pond structure. The wildlife report presents:

- The findings of the Phase 1 Habitat and Great Crested Newt Surveys
- An ecological assessment of the site together with mitigation proposals in response to assessment findings

2 METHODOLOGY

2.1 Desktop study

2.1.1 Existing information regarding ecological data within Sutton Farm cart wash pond and within a radius of 2 kilometres was collected and assessed. Consultees approached included the North and East Yorkshire Ecological Data Centre

2.1.2 The location and nature of any designated sites in the vicinity of the cart wash pond was recorded. This included both statutory and non-statutory sites. Information on species protected by the Wildlife and Countryside Act 1981 (as amended) within the general vicinity was also collected. UK and Local Biodiversity Action Plans were additionally consulted for information on priority habitats and species within a national and local context respectively.

2.2 Phase 1 Habitat Survey

2.2.1 A Phase I Habitat Survey was undertaken using the standard methodology devised by English Nature (English Nature 1993) on 16 May 2011. The vegetation within the cart wash pond and the immediate vicinity was mapped onto a large scale map using standard alphanumeric codes, which were used to produce a coded habitat map (Sketch 1). Further information was described in the form of target notes which provide supplementary information on species composition and structure, evidence of management, habitats too small to map and transitional or mosaic habitats.

2.2.2 The data gathered on the composition of the vegetation was sufficient to enable it to be characterised and assessed. Notes were made on other species seen on site, including any tracks or signs of mammals, birds and invertebrates.

2.3 Great Crested Newt Habitat Survey

2.3.1 The primary aim of this survey was the identification of great crested newts *Triturus cristatus*, a species protected under the Wildlife and Countryside Act 1981, the European Union's Habitats and Species Directive and the Council of Europe's Bern Convention. A secondary aim was to assess the conservation value of the wetland and terrestrial habitats for great crested newts and other amphibians.

2.3.2 Natural England stipulate that in order to best confirm whether great crested newts occur on a site four visits should be undertaken with at least three survey techniques used at each visit. They recommend that surveys should be undertaken between mid-March to mid-June, with at least two of these visits during mid-April to mid-May. The following survey methods were used:-

- Egg Search – this method involved searching through the aquatic vegetation (if any) close to the edge of the pond for great crested newt eggs. Eggs are laid singly on leaves of plants usually growing in less than 50 cm of water and can be easily distinguished from the eggs of palmate and smooth newts by both size and colour characteristics. The main spawning period for newts is between April and June. The vegetation beside the pond was searched for eggs on 16 and 17 May 2011.

- Torchlight Surveys - these were undertaken on 16, 17 and 26 May and 28 June 2011.

- Bottle trapping –12 bottle traps, constructed from two litre plastic bottles, were set around the margins of the small pond on 6, 17 and 26 May 2011. After setting the traps they were then revisited early the following morning (17, 18 and 27 May 2011 respectively) thereby ensuring the safety of any newts trapped. Each trap was set at approximately 2m intervals within sections of the different depths of the pond (10cm - 35cm).

2.3.3 The weather on each survey date was generally dry and well above 10^0C. These conditions are suitable for amphibian activity.

The common frog

2.3.4 For the common frog the number of spawn clumps (if any) were counted: usually each female frog lays a single clump of spawn each year. Additional evidence is the presence of any frog tadpoles and/or the presence of adult frogs.

The common toad

2.3.5 The presence of the common toad was determined by evidence of eggs intertwined amongst any vegetation and counting the number of adult toads. Additional evidence is the presence of toad tadpoles and/or the presence of adult toads.

3 RESULTS

3.1 Baseline environment (desktop study)

3.1.1 There is one statutory Site of Special Site of Scientific Interest (SSSI), of national importance for nature conservation, within a 2km radius of the Sutton Farm cart wash pond. This is Derwent Ings which lies adjacent to the River Derwent between Sutton-upon-Derwent and Melbourne & Thornton Ings. At one point the boundary of Derwent Ings is less than 500m to the south of Sutton Farm, as shown in Figure 3.

3.1.2 Derwent Ings represents one of the most important examples of agriculturally unimproved species-rich alluvial flood meadow habitat in the UK. These grasslands which were formerly widespread, are now very restricted in distribution due to agricultural improvement. They form part of an internationally threatened resource. The freshwater dyke system of the Ings supports two nationally scarce plant species as well as several locally rare ones. In addition, the Ings has been designated a Wetland of International Importance under the Ramsar Convention (Ramsar Site), a Special Protection Area (SPA) and a Special Area of Conservation (SAC). Finally, part of the site is declared as the Lower Derwent Valley National Nature Reserve (NNR).

3.1.3 There are also two non-statutory Local Wildlife Sites (LWSs) within a 2km radius of the cart wash pond, namely Mattie Brown's Covert and Pocklington Canal. These are both considered to be of county value for nature conservation. A further two sites are candidate Local Wildlife Sites, namely Sutton Rush and Quaker's Wood, Storwood. In addition, Hogg Lane, Storwood, is a deleted LWS site but still of district value for nature conservation. Wheldrake Ings (part of the Derwent Ings SSSI) is also a Yorkshire Wildlife Trust Reserve. Finally, Elvington Wood (wet woodland), which occurs approximately 2km north-west of the cart wash pond, provides further nature conservation interest within the study area.

3.1.4 Only one record for great crested newts *Triturus cristatus* was held by the North and East Yorkshire Ecological Data Centre (NEYEDC). This occurred at Elvington pond (Grid Reference SE 701 469), almost 2km north of the cart wash pond, and was recorded in 2003. In addition, two records of Common Pipistrelle *Pipistrellus pipistrellus* bats at Sutton Farm and one record of Brown Long-eared bats *Plecotus auritus* at Sutton Hall were held by NEYEDC. However, these old records pre-date 1983 and are therefore less reliable as evidence for existing bat roosts at these locations. For further details of the protected and notable species and designated site information held by the North and East Yorkshire Ecological Data Centre refer to Appendix 1.

3.2 Phase 1 Habitat Survey

3.2.1 This section is concerned with individual target notes, which offer greater detail for specific areas. The locations of all the different habitats within the study area at the Sutton Farm cart wash pond, together with the target notes, are shown in Sketch 1.

Target Note 1 (the cart wash pond)

3.2.2 Brick walls formed the east, south and west elevations of this small, rectangular pond (approximately 12m x 15m). The walls had deteriorated along parts of their lengths (Plates 1 and 2) and were partially covered in ivy *Hedera helix* and the overhanging vegetation of nearby sycamore *Acer pseudoplatanus* and horse chestnut *Aesculus hippocastanum* trees. The deterioration was particularly evident at the northern edge of the east elevation wall (Plate 3) where, a little further north the bank was supported by the large roots of a mature horse chestnut *Aesculus hippocastanum* (Plates 4 and 7, and illustrated as T1 in Sketch 1).

3.2.3 The shallow, gently sloping pond edge of the northern elevation formed the former entrance to the cart wash pond (Plate 5). The pond bed was covered

by a thick, black, anaerobic, sediment which, as the water dried out during the duration of the survey (16 May – 28 June 2011), became more and more exposed along its northern edge. Moving from north to south the water depth above the sediment gradually increased to a maximum of approximately 35cm. At the same time the thickness of the sediment increased from a level which was safe to wade through (up to c. 30cm) to an estimated thickness of 40 – 50cm. A moorhen nest was recorded within the open water at the north-west corner (Plate 6).

3.2.4 Tall ruderals fringed the 'natural', northern edge of the pond with frequent nettle *Urtica dioica*, Russian comfrey *Symphytum x uplandicum*, cleavers *Galium aparine*, great willowherb *Epilobium hirsutum* and cow parsley *Anthriscus sylvestris*. Other plants recorded here included dame's-violet *Hesperis matronalis*, clustered dock *Rumex conglomeratus,* pendulous sedge *Carex pendula,* spear thistle *Cirsium vulgare* and feverfew *Tanacetum pathenium*.

3.2.5 The tall ruderals gave way to regularly cut grass adjacent to the track. Ephemeral, annual plants recorded here included shepherd's-purse *Capsella bursa-pastoris* and wavy bitter-cress *Cardamine flexuosa.* A rabbit was recorded in this area on the date of survey (16/5/11).

3.2.6 Dense scrub (refer to Target Note 2), a line of leylandii *Cupressus x leylandii spp.* trees and a narrow band of broadleaved woodland (Target Note 3) fringed the west, south and eastern edges of pond respectively.

Target Note 2 (dense scrub)

3.2.7 A narrow length of dense scrub fringed the western edge of the pond. Trees and shrubs recorded were holly *Ilex aquifolium*, yew *Taxas baccata*, leylandii *Cupressus x leylandii spp.*, elder *Sambucus nigra*, hawthorn *Crataegus monogyna* and sapling sycamore *Acer pseudoplatanus*.

Target Note 3 (broadleaved woodland, veteran tree and remnant woodland ground flora)

3.2.8 A small band of mature sessile oak *Quercus petraea* and horse chestnut *Aesculus hippocastanum* occupied the narrow band of land to the east of the pond. Trees and shrubs in the understorey and field layers included sycamore *Acer pseudoplatanus*, holly *Ilex aquifolium*, yew *Taxa baccata*, elder *Sambucus nigra* and rose *Rosa spp.* Patches of bramble *Rubus fruticosus* occurred in the field layer whilst woodland herbs in the ground layer were frequent bluebell *Hyacinthoides non-scripta* and common bent *Agrostis capillaries.* Other more occasional woodland plants recorded amidst the abundant leaf litter and fallen twigs were herb bennett *Geum urbanum,* wood anemone *Anemone nemorosa*, wood forget-me-not *Myosotis sylvatica*, garlic mustard *Alliaria petiolata* ivy *Hedera helix* and seedling holly *Ilex aquifolium*, sycamore *Acer pseudoplatanus* and horse chestnut *Aesculus hippocastanum*.

3.2.9 The large circumference and diameter of the over-mature horse chestnut *Aesculus hippocastanum*is tree at the north-eastern edge of the pond (Pate 7 and shown as T1 in Sketch 1) are indicative characteristics of a veteran tree (Reed 2000, Appendix 2). Assessing the age of such a tree, however, is not an easy task and is usually, at best, an estimate. Nevertheless, using a

system developed by White (White, 1998) provides one of the best estimates of age available (Read, 2000). White's system is based on tree girth and core development and he notes that great care is needed when deciding which site category a tree should be placed when determining its rate of growth. He identified seven categories: champion tree potential (ideal site conditions); good site (open grown, sheltered), average site (garden, parkland); churchyard; poor ground and/or some exposure; woodland boundary pollard (or open woodland); and inside woodland. From observed conditions on site T1 was categorised as a tree which had mostly grown in either a good or average site.

3.2.10 On this basis the age of T1 was estimated to be between 263 and 319 years old (refer to Appendix 2 for further details) and, on this basis, can be categorised as a veteran tree. It is therefore likely that T1 was planted (or self-seeded) at some point in the early eighteenth century. However, it must be noted that determination of site history is often a matter of some speculation and that the current conditions surrounding T1 may not have prevailed many years ago when the tree in question was young.

3.2.11 Finally, research indicates that, although relatively common, four of the herbs recorded in the nearby vicinity are ancient woodland ground flora indicator species (West Yorkshire Ecology 2010; Hedgerow Regulations 1997; North Yorkshire SINC Panel 2002; English Nature 2004). These were wood anemone *Anemone nemorosa*, herb bennett *Geum urbanum*, bluebell *Hyacinthoides non-scripta* and wood forget-me-not *Myosotis sylvatica.*

Target Note 4 (broadleaved woodland)

3.2.12 Sessile oak *Quercus petraea* dominated the canopy of this broadleaved woodland with occasional horse chestnut *Aesculus hippocastanum* and sycamore *Acer pseudoplatanus*. A similar understorey and field layer to that described in Target Note 3 was recorded although additional shrubs included non-native rhododendron *Rhododendron ponticum* and snowberry *Symphoricarpus albus*. Woodland herbs such as bluebell *Hyacinthoides non-scripta*, wood anemone *Anemone nemorosa* and herb bennett *Geum urbanum* were, however, generally absent from the ground flora. Instead the ground flora had frequent daffodil *Narcissus pseudonarcissus*, ground elder *Aegopodium podagraria*, cleavers *Galium aparine*, cow parsley *Anthriscus sylvestris* and nettle *Urtica dioica*.

Target Note 5 (tall ruderals and occasional mature trees)

3.2.13 A single mature beech *Fagus sylvatica,* semi-mature sycamore *Acer pseudoplatanus* and sapling cherry *Prunus spp.* were recorded on the opposite edge of the track, just to the north of the cart wash pond. Most of this land, however, was occupied by a band of tall ruderals. Frequent herbs and grasses were cock's-foot *Dactylis glomerata*, creeping bent *Agrostis stolinifera*, soft-brome *Bromus hordaceus,* nettle *Urtica dioica*, hogweed *Heracleum sphondylium*, white dead-nettle *Lamuim album*, cow parsley *Anthriscus sylvestris*, creeping buttercup *Ranunculus repens*, dandelion *Taraxacum spp.* and Russian comfrey *Symphytum x uplandicum*. Occasional plants recorded included wood dock *Rumex sanguineus*, ribwort plantain *Plantago lanceolata*, common mouse-ear *Cerastium fontanum* silverweed *Potentilla anserine* and scented mayweed *Matricaria recutita.*

Target Note 6 (mixed plantation)

3.2.14 A narrow strip of mixed broadleaved and conifer plantation occupied this location. Densely spaced beech *Fagus sylvatica*, sycamore *Acer pseudoplatanus* and Scots pine *Pinus sylvestris* were recorded with a sparse understorey of elder *Sambucus nigra* and holly *Ilex aquifolium*.

H1 (Overgrown hedgerow)

3.2.15 A small length of overgrown hedge fringed the eastern border of the narrow woodland at this location. The hedge was composed of holly *Ilex aquifolium* and sapling/semi-mature sycamore *Acer pseudoplatanus* (generally over 5m tall) with occasional seedlings of yew *Taxas baccata.*

H2 (Planted hedgerow)

3.2.16 A young hedge, interspersed by tall ruderal vegetation, had recently been planted between the two fences at this location. All the trees and shrubs were <1.5m tall and included holly *Ilex aquifolium*, hazel *Corylus avellana*, blackthorn *Prunus spinosa*, hawthorn *Crataegus monogyna* and elder *Sambucus nigra*. Seedling horse chestnut *Aesculus hippocastanum* and sycamore *Acer pseudoplatanus* were also recorded. Tall ruderals recorded included garlic mustard *Alliaria petiolata*, cleavers *Galium aparine*, dame's-violet *Hesperis matronalis*, nettle *Urtica dioica*, feverfew *Tanacetum pathenium*, herb Robert *Geranium robertianum* and Russian comfrey *Symphytum x uplandicum*.

H3 (Hawthorn hedge)

3.2.17 Hawthorn *Crataegus monogyna* dominated hedgerows, approximately 2.5 – 3.5 tall, bordered the cattle-grazed pasture to the east of the cart wash pond. Other trees and shrubs recorded within these hedgerows included sycamore *Acer pseudoplatanus*, elder *Sambucus nigra* and holly *Ilex aquifolium*.

3.3 Great Crested Newt Survey

3.3.1 The location of the cart wash pond is shown in the Figures 1 – 4 and Sketch 1. The results of the egg search, torch and bottle trap surveys of the pond are summarised in Table 1:

Table 1 Amphibian data recorded for the cart wash pond in 2011

Method	**Results (date)**					
	16/5/2011	17/5/2011	18/5/2011	26/5/2011	27/5/2011	28/6/2011
Egg search	Nil	Nil				
Torching	Nil	Nil		Nil		Nil
Bottle traps		Nil	Nil		Nil	

3.3.2 No great crested newt eggs (or eggs from any other newt species) were found during the egg surveys. In addition, no adult newts (or amphibians of any species) were recorded during the torch and bottle trap surveys. Nevertheless, numerous water fleas (order *Copepoda)* were recorded within

the water together with occasional water beetles (order *Coleoptera),* greater water boatman (family *Notonectidae)* and leeches (class *Hirudinea).*

3.4 Other fauna

Birds:

3.4.1 A total of 11 bird species were recorded in the vicinity of the cart wash pond (during the Phase 1 Habitat Survey and Great Crested Newt Survey). These are listed below:

Blackbird (general vicinity of the cart wash pond)
Bullfinch (pair recorded in the species-rich hedgerow beside Southwood Road)
Greenfinch (hedgerow - to the east of cart wash pond)
Grey partridge (pair recorded in the fields beside Southwood Road)
Moorhen (nest recorded within the cart wash pond)
Robin (general vicinity of the cart wash pond)
Song thrush (fields to the north and east of the cart wash pond)
Stockdove (hedgerow north of the cart wash pond)
Swallow (flying over the cart wash pond)
Wood pigeon (fields north and east of the cart wash pond)
Yellowhammer (hedgerow - to the east of cart wash pond on 16/5/11)

Mammals:

3.4.2 Rabbits were recorded at the northern edge of the cart wash pond.

4 WILDLIFE VALUE OF SUTTON FARM CART WASH POND

4.1 Criteria for evaluation

4.1.1 In order to determine the significance of any repair/restoration work at the Sutton Farm cart wash pond upon ecological interests, it is necessary to determine the value and sensitivity of each area to be affected. It has become standard practice for bodies designating sites of nature conservation interest to evaluate sites according to criteria identified in the Nature Conservation Review (Ratcliffe, 1977) and in Guidelines for the selection of biological SSSIs (NCC 1989). Briefly these criteria are:

- size (extent);
- diversity;
- rarity;
- fragility;
- typicalness;
- recorded history;
- position within an ecological/geographical unit;
- potential value;
- intrinsic value.

4.1.2 These criteria can be used to help assess the International, National, Regional, High Local (County), Moderate Local (District), Low Local (Parish) or Negligible overall value of the fauna and flora within a site. Examples of the levels of ecological value that have been assigned to the fauna and/or flora of

specific areas are summarised in Table 1. The examples follow government guidance on the nature conservation aspects of planning 'Planning Policy Statement 9: Biodiversity and Geological Conservation'. This was published by the Department for Communities and Local Government (DCLG 2006). A supporting document 'Planning for Biodiversity and Geological Conservation - A Guide to Good Practice' was published by the Office of the Deputy Prime Minister in the same year (ODPM 2006).

4.1.3 PPS 9 acknowledges that, in addition to both statutory and non-statutory designated sites of national and regional importance, networks of undesignated natural habitats can also provide a valuable resource. For example PPS 9 states that such areas "…. can link sites of biodiversity importance and provide routes or stepping stones for the migration, dispersal and genetic exchange of species in the wider environment" (PPS 9 paragraph 12). Guidance is also given for the re-use of previously developed land which has significant biodiversity or geological interest of recognised local importance. In such cases the recommendation is that "…local planning authorities, together with developers, should aim to retain this interest or incorporate it into any development of the site" (PPS 9 paragraph 13). Also of relevance is the recognition that development proposals "… provide many opportunities for building-in beneficial biodiversity or geological features as part of good design" (PPS 9 paragraph 14).

4.1.4 In summary it is not uncommon for otherwise unpromising (and undesignated) sites to support species highlighted as being of conservation interest or concern in one of a number of published lists. In such cases, it becomes necessary to consider the value of the site on the basis of its more noteworthy species. Thus, an overall site assessment involves variable weighting of the criteria used for the selection of SSSIs. Some areas may be important for a combination of attributes, whilst others are rated highly for only a single important feature. This report therefore follows the specific, detailed, ecological advice given by Regini & Tofts (2000) on the three categories of Local Ecological Value shown in Table 2: High Local Value (County), Moderate Local Value (District) and Low Local Value (Parish).

Table 2: Ecological value of habitats (Regini and Tofts - 2000)

Level of Value	Examples
International	Internationally designated or proposed sites, or otherwise meeting criteria for international designation. Sites supporting populations of internationally important species.
National	Nationally designated sites such as SSSIs, or non-designated sites meeting SSSI designation. Those containing viable areas of any key habitat identified in the UK Biodiversity Action Plan. Sites supporting viable breeding populations of Red Data Book species (excluding scarce species), or supplying critical elements of their habitat requirements.
Regional	Sites containing viable areas of threatened habitats listed in a Regional Biodiversity Action Plan (or some Natural Areas), comfortably exceeding Sites of Scientific Importance (SSI) criteria, but not meeting SSSIs selection criteria. Sites supporting viable breeding populations of Nationally Scarce species or those included in the Regional Biodiversity Action Plan (or some Natural Areas) on account of their rarity, or supplying critical elements of their habitat requirements.
High Local (County)	Sites meeting the criteria for a county or metropolitan area designation (such as Sites of Scientific Importance or Local Wildlife Areas), which may include amenity and educational criteria in urban areas. Ancient semi-natural woodland. Designated Local Nature Reserves. Sites containing viable areas of any key habitat type identified in the County Biodiversity Action Plan (or some Natural Areas). Sites supporting viable breeding populations of species known to be county/metropolitan rarities, or supplying critical elements of their habitat requirements (e.g. featuring in a county 'red data book' or included in the county/metropolitan Biodiversity Action Plan or some Natural Areas), or supplying critical elements of their habitat requirements.
Moderate Local (District)	Undesignated sites, or features considered appreciably to enrich the habitat resource within the context of the Borough or District, or included in the Borough or district Biodiversity Action Plan or some Natural Areas. Amenity and educational functions will be recognised in urban areas. Sites supporting viable breeding populations of species listed as rare in the District or Borough Biodiversity Action Plan or some Natural Areas, or supplying critical elements of their habitat requirements.
Low Local (Parish)	Undesignated sites, or features considered appreciably to enrich the habitat resource within the context of the Parish or neighbourhood (e.g. a species-rich hedgerow).
Negligible	Low grade and widespread habitats.

4.1.5 The evaluation of fauna and flora within and immediately adjacent to the cart wash pond at Sutton Farm that would be impacted by any repair/restoration work is based on survey work undertaken between 16th May and 28th June 2011. Information gained from the desk-based study is referred to wherever appropriate in each evaluation.

4.2 Habitats

Sutton Farm cart wash pond (and adjacent woody habitats)

4.2.1 The tall ruderal habitat on the northern margin of the pond is virtually ubiquitous throughout the lowlands of Britain and the key factor in its development is the irregularity of any grazing and/or cutting. The presence of mature and sapling trees and shrubs adjacent to the east, west and south of the pond was further evidence for the lack of any recent management. Most of the species recorded here are widespread throughout the UK and little change has occurred in their overall distribution since the 1962 Atlas (Preston *et. al.* 2002).

4.2.2 The ecological value of the cart shed pond is limited by the fact that three of its banks are walled. In addition, heavy shading has precluded the development of any aquatic, submerged or marginal wetland flora and a thick layer of sediment has built up on the pond floor. Nevertheless, the open water and the mosaic of adjacent natural habitats recorded provide a refuge and breeding habitat for a range of invertebrates, small mammals and birds. This includes foraging habitat for protected species such as bats and also the nesting of water-related bird species such as moorhens.

4.2.3 Further ecological (and historical) value to the pond is provided by the likely veteran horse chestnut *Aesculus hippocastanum* tree on its north-eastern edge. This over-mature tree provides conditions suitable for a wide range of other plants and animals, many of which require the very special environment created in such an old tree. In addition, its roots contribute to the small section of natural bank here which will support the terrestrial life stages of aquatic invertebrates as well as bank dwelling small mammals. Finally, four ancient woodland herb indicator species were also recorded in the remnant woodland ground flora at this location.

4.2.4 For the reasons given in paragraphs 4.2.3 and 4.2.4 the mosaic of habitats within and immediately adjacent to the cart wash pond are considered to be of low local (Parish) ecological value.

4.3 Fauna

Great Crested Newts (protected species)

4.3.1 Evidence from the survey indicates that great crested newts (and all other amphibian species) are absent from the cart wash pond. The importance of the pond as an amphibian breeding site was therefore categorised as negligible (Swan and Oldham 1993.

5 SUMMARY

5.1 EINC was commissioned in May 2011 by Ed Dennison Archaeological Services Ltd. (EDAS), to undertake a wildlife report for the proposed restoration of the cart wash pond at Sutton Farm, Sutton-upon-Derwent, East Yorkshire. The wildlife report presents:

- The findings of the Phase 1 Habitat and Great Crested Newt Surveys

- An ecological assessment of the site together with mitigation proposals in response to assessment findings

5.2 An evaluation of the habitats and protected species within and adjacent to the cart wash pond was based on ecological survey work undertaken between 16th May and 28th June 2011. This data was supplemented by information acquired from a desk-top study and consultees are acknowledged in the text wherever appropriate.

5.3 The cart wash pond and immediate adjacent habitats was considered to be of low local (Parish) conservation significance. There was no evidence, however, of any protected species, namely great crested newts, within the site.

6 REFERENCES

DCLG (2006) *Planning Policy Statement 9: Biodiversity and Geological Conservation – Final Regulatory Impact Assessment* Department for Communities and Local Government

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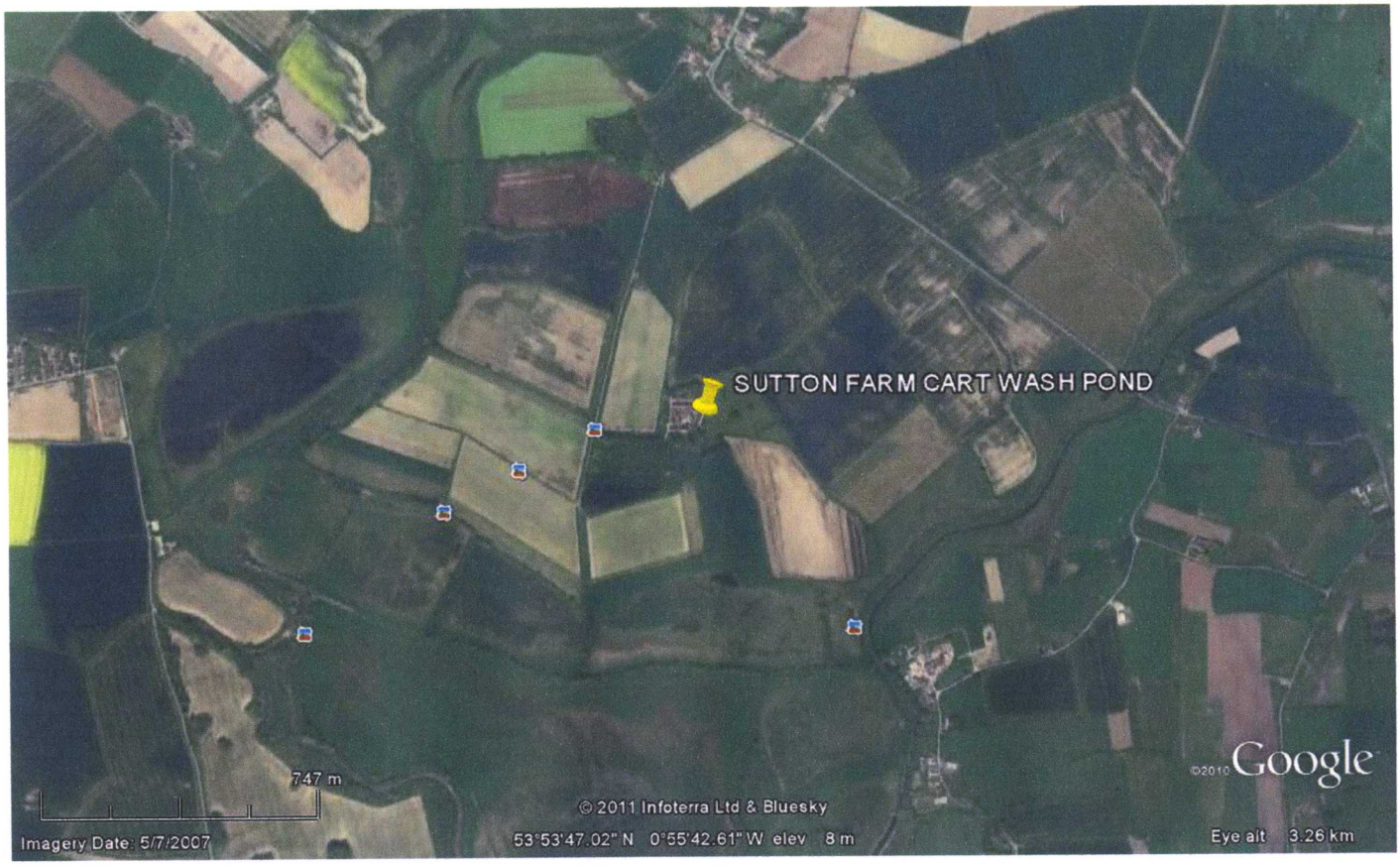
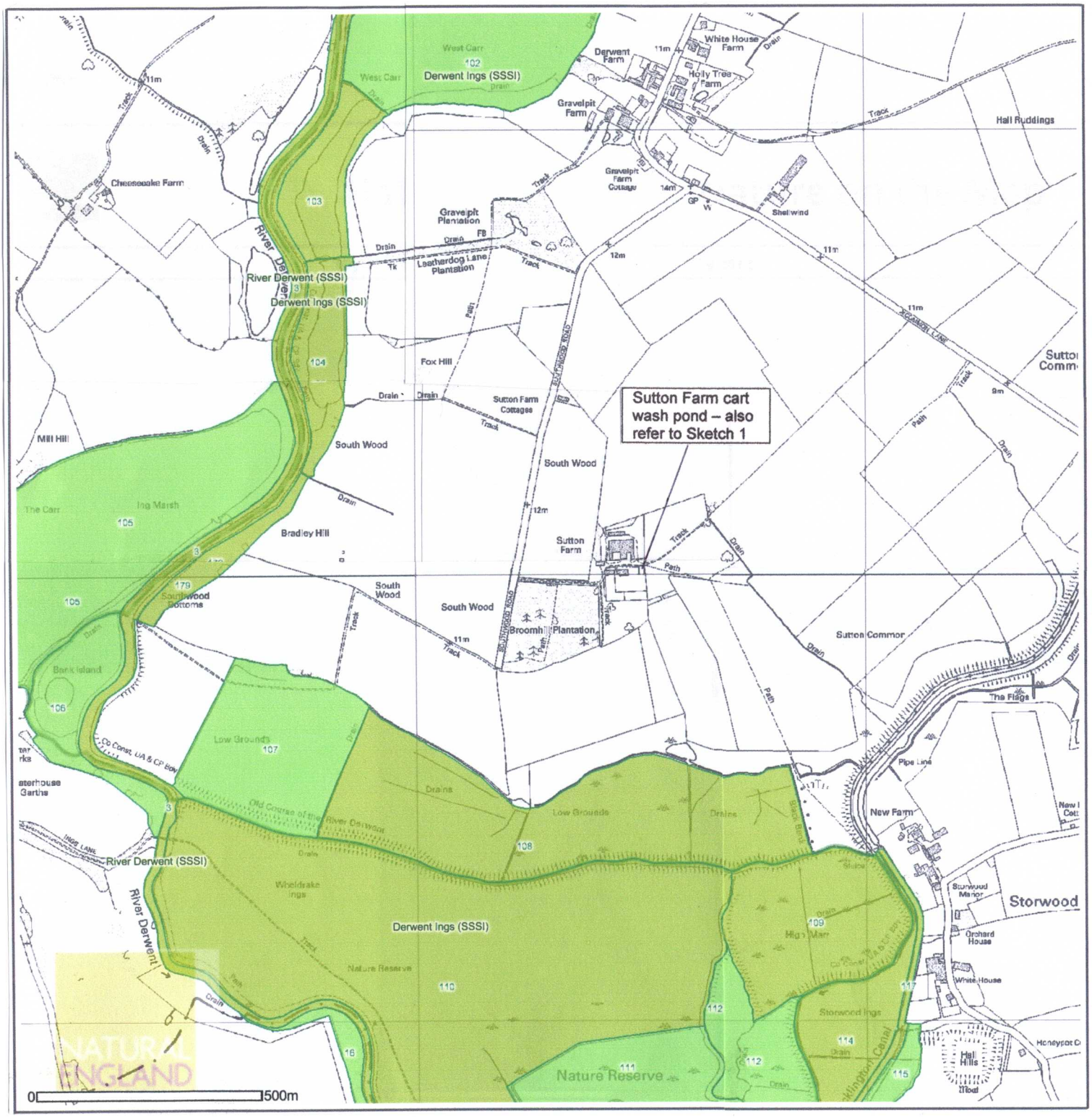
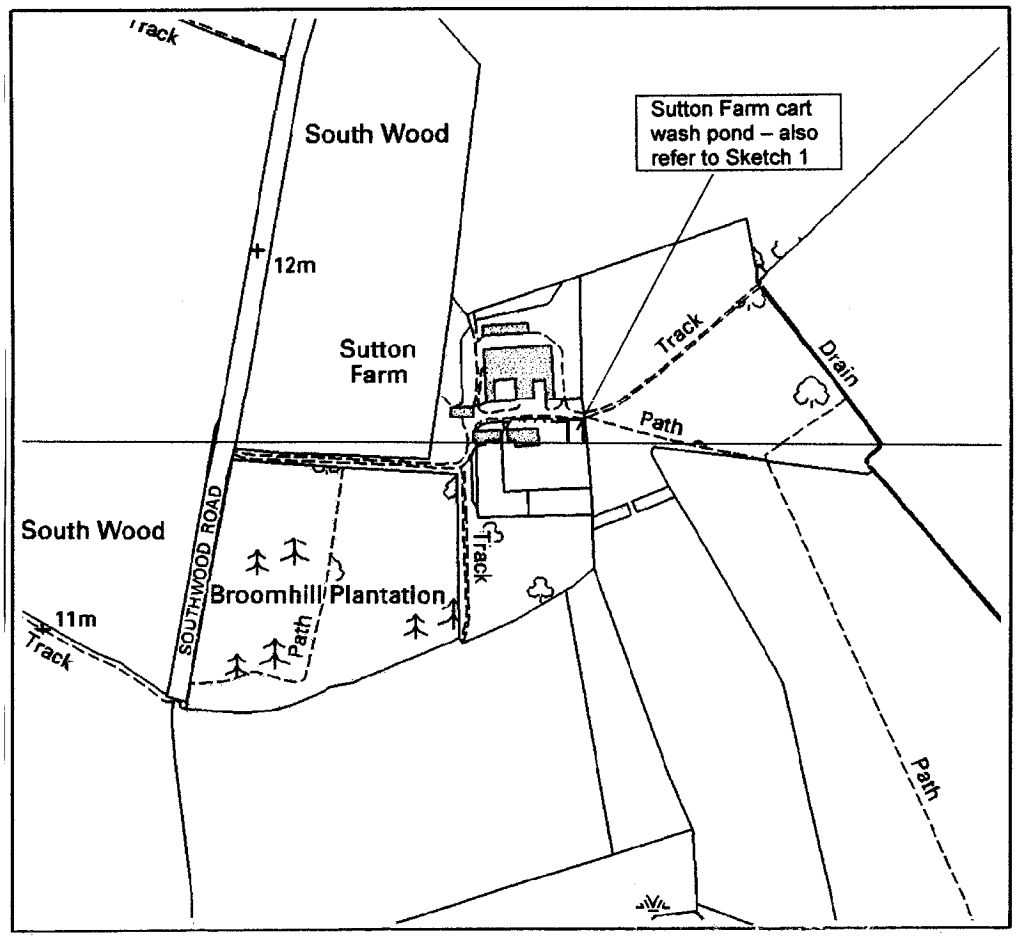


PROJECT	**Cart wash pond at Sutton Farm**
TITLE	**AERIAL PHOTO - SITE LOCATION MAP**
SCALE **As shown** DATE	**October 2011**
EINC	FIGURE 1

PROJECT	**Cart wash pond at Sutton Farm**
TITLE	**AERIAL PHOTO – EXTENT OF THE PHASE 1 HABITAT SURVEY**
SCALE **As shown** DATE **October 2011**	
EINC	FIGURE 2



PROJECT	**Cart wash pond at Sutton Farm**
TITLE	**PROXIMITY OF DERWENT INGS (SITE OF SPECIAL SCIENTIFIC INTEREST)**
SCALE **As shown**	DATE **October 2011**
EINC	FIGURE **3**



PROJECT	Cart wash pond at Sutton Farm
TITLE	1:200 SCALE MAP OF THE SITE
SCALE 1:200	DATE October 2011
EINC	FIGURE 4

Sutton Farm cart wash pond

Key to Sketch 1 – Phase 1 Habitat Map


Broadleaved woodland


Dense scrub


Scattered scrub


Individual mature tree


Line of leylandii *Cupressus x leylandii spp.*


Young hedgerow


Overgrown hedgerow


Hawthorn dominated hedgerow


Tall ruderals (nettles *Urtica dioica,* tall grasses etc.)


Open water


Exposed sediment

Cattle-grazed, species-poor, pasture

Arable

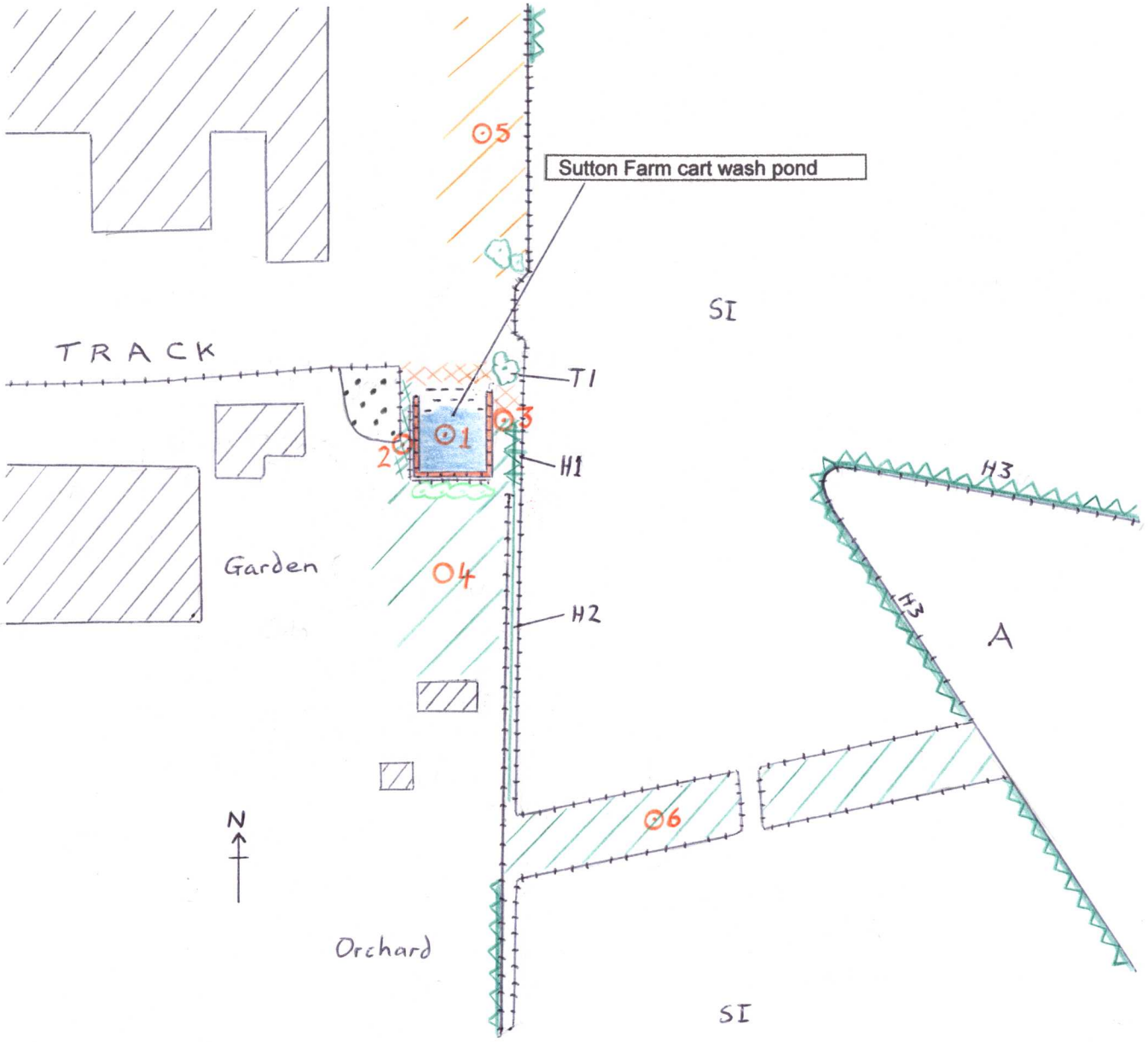

Brick wall


Fence


Building


Gravel


Target Note



PROJECT	Cart wash pond at Sutton Farm
TITLE	PHASE 1 HABITAT MAP
SCALE	Not to scale
DATE	October 2011
EINC	SKETCH 1

Plate 1 South wall

Plate 2 East wall (looking west to east)

Plate 3 East wall (broken wall edge nearest the northern end)

Plate 4 East wall (exposed tree roots of the sweet chestnut – near the northern end)

Plate 5 'Natural' northern bank (looking from south to north)

Plate 6 Moorhen nest (looking southwards from the northern edge)

Plate 7 Veteran horse chestnut tree (T1) at the north-eastern edge of the pond

APPENDIX 1

INFORMATION RECEIVED FROM THE NORTH AND EAST YORKSHIRE ECOLOGICAL DATA CENTRE

NORTH & EAST YORKSHIRE ECOLOGICAL DATA CENTRE

Our Ref: 11-406
Your Ref: CW

Site Data Search

Statutory Sites

The following data resources were searched:

Sites of Special Scientific Interest	Special Areas of Conservation
Special Protection Areas	Ramsar sites
National Parks	Areas of Outstanding Natural Beauty
National Nature Reserves	Local Nature Reserves

We do not hold full details of statutory sites therefore if you require further information you should contact Natural England. Their website is at:
http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/default.aspx.

Statutory Sites

The following Statutory site was found within the search area, and is shown on the enclosed map.

Designation	*Name or location of site*	*Grid Reference*
Sites of Special Scientific Interest	Derwent Ings River Derwent Melbourne & Thornton Ings	Adjacent to river within search area Whole length of river within search area SE 73 455
Special Protection Areas	Lower Derwent Valley	All of above areas
Special Areas of Conservation	Lower Derwent Valley	All of above areas
Ramsar sites	Lower Derwent Valley	All of above areas
National Nature Reserve	Lower Derwent Valley	SE 703 463 SE 693 451 SE 704 437

Local Nature Reserves:

There were no Local Nature Reserves found within the search area.

Non-Statutory Sites

Local Wildlife Sites: York

Local Wildlife Sites are known in the City of York as SINCs (Sites of Importance for Nature Conservation). The following sites were found to be within (or partly within) your search area and their locations are shown on the enclosed map:

Site Code	*Site Name*	*Grid reference*
SE64-06	Mattie Brown's Covert	SE 690 438

Further details of SINCs within the City of York can be obtained from the Countryside Service, Directorate of City Strategy, 9 St Leonard's Place, York YO1 7ET.

NORTH & EAST YORKSHIRE ECOLOGICAL DATA CENTRE

Our Ref: 11-406
Your Ref: CW

Tel: (01904) 551662. Email: natural.environment@york.gov.uk

Local Wildlife Sites: East Riding of Yorkshire
The following sites were found to be within (or partly within) your search area and their locations are shown on the enclosed map:

Site Code	*Site Name*	*Grid reference*	*LWS Status*
SE7045-08	Sutton Rush	SE 719 456	Candidate LWS
SE7045-10	Hogg Lane, Storwood	SE 720 450	Deleted LWS
SE7045-00	Pocklington Canal	SE 710 444 – SE 722 456	Designated LWS
SE7040-02	Quaker's Wood, Storwood	SE 722 440	Candidate LWS

A systematic survey of all Local Wildlife Sites in East Yorkshire is currently in progress. However this is only in its third year and as such there is little additional information regarding the East Riding of Yorkshire Local Wildlife Sites at present.

Yorkshire Wildlife Trust Reserves

Name or location of site	*Grid Reference*
Wheldrake Ings	SE 703 435

We do not hold details of the YWT Reserves, and inclusion of the boundaries in the data search does not imply that there is public access to sites. Further information can be obtained from the Trust at: 1 St George's Place, York, YO24 1GN, Tel: 01904 613467, or http://www.ywt.org.uk.

Site-based Habitat data:
All the Natural England Habitat inventories were searched (including Woodland Inventory & Grassland Inventory. Please see Natural England's website for a full list of habitat inventories). The following areas were found:

Designation	*Name or location of site*	*Grid Reference*
Ancient & Semi-Natural Woodland Plantation on Ancient Woodland Sites Wet woodland	Elvington Wood	SE 694 466
National grassland inventory: undetermined grassland Lowland meadows Fens	Derwent Ings Melbourne & Thornton Ings	Adjacent R Derwent SE 723 455
Reedbeds	Melbourne & Thornton Ings	SE 723 455
Coastal & floodplain grazing marsh	S area of Derwent Ings Melbourne & Thornton Ings Adjacent Pocklington Canal	SE 704 441 SE 723 455 SE 715 450

NORTH & EAST YORKSHIRE ECOLOGICAL DATA CENTRE

Our Ref: 11-406
Your Ref: CW

Species data search

Our species database search found various records in the area including Great Crested Newt, European White-Fronted Goose, Tansy Beetle and several species of Bat. Please note that a lack of survey information for any particular area or taxonomic group does not necessarily mean that there is no nature conservation interest present and I would therefore recommend that a site survey is carried out in order to assess any ecological interest that might be present before proceeding with the development.

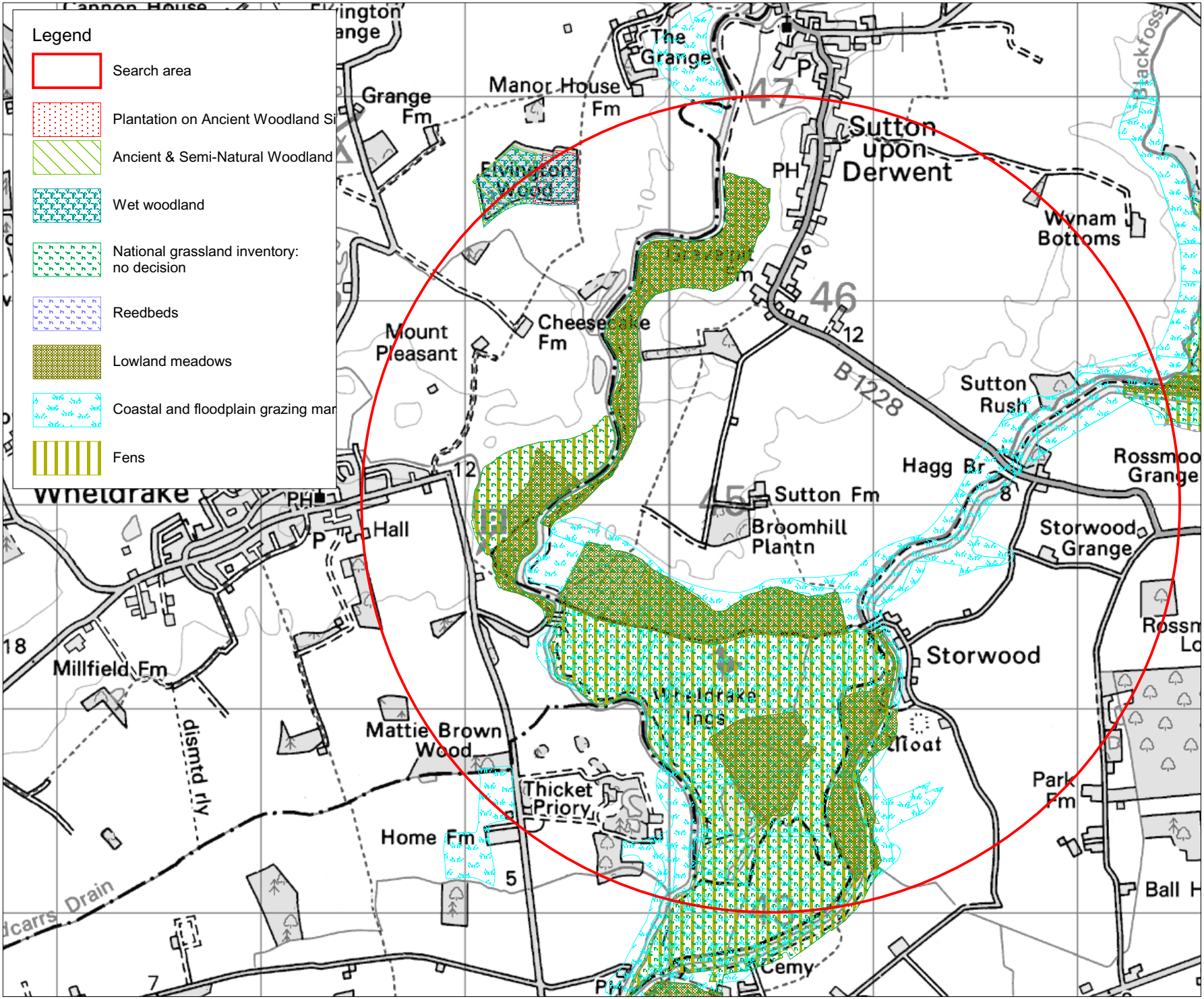
Also in addition to the records shown on the enclosed sheet, there are records within the search area held by the North Yorkshire Bat Group. For further information on these records, you should contact the North Yorkshire Bat Group directly, contact details for which are given below.

John Drewett, Chairman, North Yorkshire Bat Group, No Man's Common, Arrathorne, Bedale, DL8 1NA. Tel: 01677 451886.
www.nybats.org.uk
johndrewett@btinternet.com

One particular point to bear in mind is that many bridges in East Yorkshire provide good opportunities for bats and support bat roosts. Please consult the East Yorkshire Bat Group regarding this aspect if the proposal is likely to require working close to or within the structure of any bridge. Bats are European Protected Species under the Conservation (Natural Habitats & c.) Regulations 1994. As you are probably aware, should a proposal be likely to affect or disturb bats and/or their roosts and therefore require derogation from the Regulations, a licence application to the Wildlife Licensing Unit, Natural England, is required in advance of the works commencing. The relevant contact is:

Tony Lane, East Yorkshire Bat Group, 7 Orchard Road, Skidby, Cottingham, East Yorkshire, HU17 5TL.

NB: The species search has been restricted to records from 1960. However, if older records are specifically required, these may be obtained at additional cost from NEYEDC upon request.



Client: EINC

Client Ref: CW01

Our Ref: 11-406

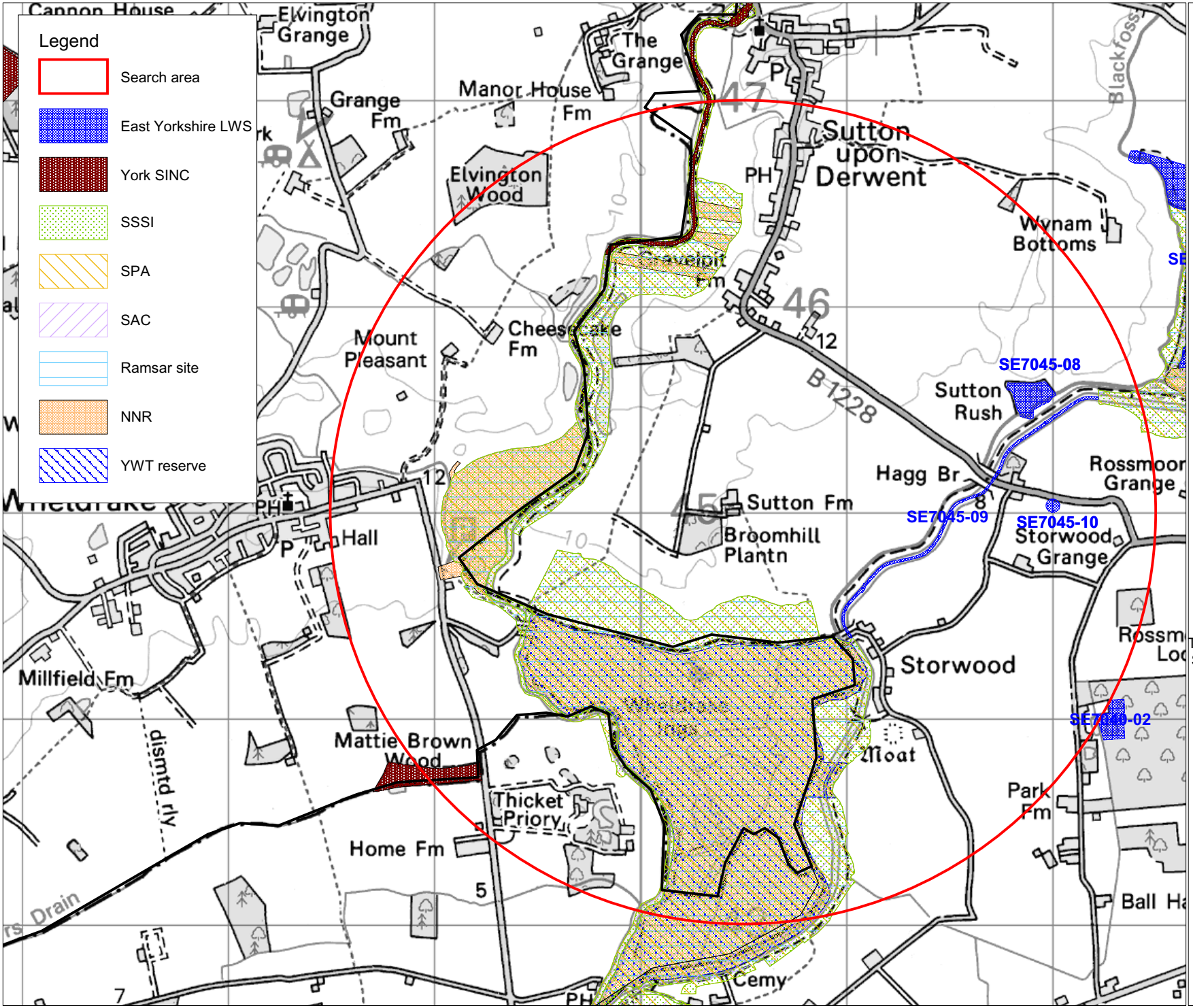
Description: Map showing areas of notable habitat listed on the Habitat Inventories

Scope of search: 2km radius from SE 705 450

Scale: 1:25,000 when printed at A4

Date produced: 26/10/2011

NEYEDC



Client: EINC

Client Ref: CW01

Our Ref: 11-406

Description: Map showing conservation sites within the search area.

Scope of search: 2km radius from SE 705 450

Scale: 1: 25,000 when printed at A4

Date produced: 26/10/2011

NEYEDC

NEYEDC

Our ref: 11-406
Date: 26/10/2011
Species list for data search of area: 2km radius from SE 705 450

The table below lists all species for which records have been found within the search area. The date refers to the most recent occurrence for each species.

SPECIES LIST

Scientific name	Common name	Taxonomic group	Year	Designated as
Bufo bufo	Common Toad	amphibian	2003	UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Rana temporaria	Common Frog	amphibian	2003	Habitats Directive Annex 5 Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Triturus cristatus	Great Crested Newt	amphibian	2003	Bern Convention Appendix 2 Habitats Directive Annex 4 Statutory Instrument 2716- The Conservation (Natural Habitats etc) Regulations 1994. Schedule 2 UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Triturus vulgaris	Smooth Newt	amphibian	2003	Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Accipiter gentilis	Goshawk	bird	1981	Bonn Convention Appendix 2 EC CITES Annex A RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Accipiter nisus	Sparrowhawk	bird	2000	Bonn Convention Appendix 2 EC CITES Annex A
Actitis hypoleucos	Common Sandpiper	bird	1999	Bern Convention Appendix 2 Bonn Convention Appendix 2
Alauda arvensis	Skylark	bird	2000	Birds Directive Annex 2.2 UK BAP Non-strict
Alcedo atthis	Kingfisher	bird	2000	Bern Convention Appendix 2 Birds Directive Annex 1 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Anas acuta	Pintail	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 EC CITES Annex C RDB Birds - 1b RDB Birds - 2 RDB Birds - 4b
Anas clypeata	Shoveler	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 EC CITES Annex C RDB Birds - 4b
Anas crecca	Teal	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 EC CITES Annex C RDB Birds - 1b
Anas penelope	Wigeon	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 EC CITES Annex C RDB Birds - 1b RDB Birds - 4b
Anas platyrhynchos	Mallard	bird	2010	Birds Directive Annex 2.1 Bonn Convention Appendix 2
Anas querquedula	Garganey	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 EC CITES Annex A RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Anas strepera	Gadwall	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b

Scientific name	Common name	Taxonomic group	Year	Designated as
Anser albifrons	White-Fronted Goose	bird	1998	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b UK BAP Non-strict
Anser albifrons subsp. albifrons	European White-Fronted Goose	bird	1995	Bonn Convention Appendix 2 UK Biodiversity Action Plan priority species
Anser anser	Greylag Goose	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 RDB Birds - 1b
Anser brachyrhyncus	Pink-Footed Goose	bird	2000	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 1b
Anser caerulescens	Snow Goose	bird	1996	Bonn Convention Appendix 2
Anser fabalis	Bean Goose	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 RDB Birds - 4b
Anser indicus	Bar-Headed Goose	bird	1999	Bonn Convention Appendix 2
Anthus petrosus	Rock Pipit	bird	1996	Bern Convention Appendix 2
Anthus pratensis	Meadow Pipit	bird	2000	Bern Convention Appendix 2
Anthus spinoletta	Water Pipit	bird	1996	Bern Convention Appendix 2
Anthus trivialis	Tree Pipit	bird	1996	Bern Convention Appendix 2 UK Biodiversity Action Plan priority species
Arenaria interpres	Turnstone	bird	1996	Bern Convention Appendix 2 Bonn Convention Appendix 2 RDB Birds - 1b
Asio flammeus	Short-Eared Owl	bird	1995	Bern Convention Appendix 2 Birds Directive Annex 1 EC CITES Annex A
Aythya ferina	Pochard	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 2
Aythya fuligula	Tufted Duck	bird	2010	Birds Directive Annex 2.1 Bonn Convention Appendix 2
Aythya marila	Scaup	bird	1995	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 2 RDB Birds - 4b UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Botaurus stellaris	Bittern	bird	1998	Bern Convention Appendix 2 Birds Directive Annex 1 RDB Birds - 2 RDB Birds - 3 RDB Birds - 4a UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Branta canadensis	Canada Goose	bird	2000	Birds Directive Annex 2.1 Bonn Convention Appendix 2
Branta leucopsis	Barnacle Goose	bird	2000	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB - Internationally Important RDB Birds - 1b RDB Birds - 4b
Bucephala clangula	Goldeneye	bird	2000	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 2
Buteo buteo	Buzzard	bird	2000	Bonn Convention Appendix 2 EC CITES Annex A
Calidris alba	Sanderling	bird	1996	Bern Convention Appendix 2 Bonn Convention Appendix 2 RDB Birds - 1b

Scientific name	Common name	Taxonomic group	Year	Designated as
				RDB Birds - 4b
Calidris alpina	Dunlin	bird	2000	Bern Convention Appendix 2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b
Calidris canutus	Knot	bird	1996	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b
Calidris ferruginea	Curlew Sandpiper	bird	2000	Bern Convention Appendix 2 Bonn Convention Appendix 2
Calidris minuta	Little Stint	bird	1999	Bern Convention Appendix 2 Bonn Convention Appendix 2
Caprimulgus europaeus	Nightjar	bird	1983	Bern Convention Appendix 2 Birds Directive Annex 1 RDB Birds - 5 UK Biodiversity Action Plan priority species
Carduelis cabaret	Lesser Redpoll	bird	2004	UK Biodiversity Action Plan priority species
Carduelis cannabina	Linnet	bird	1999	Bern Convention Appendix 2 UK BAP Non-strict
Carduelis carduelis	European Goldfinch	bird	2010	Bern Convention Appendix 2
Carduelis chloris	European Greenfinch	bird	2009	Bern Convention Appendix 2
Carduelis flavirostris	Twite	bird	1986	Bern Convention Appendix 2 RDB Birds - 1a RDB Birds - 1b UK BAP Non-strict
Carduelis spinus	Siskin	bird	1997	Bern Convention Appendix 2
Charadrius dubius	Little Ringed Plover	bird	2000	Bern Convention Appendix 2 Bonn Convention Appendix 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Charadrius hiaticula	Ringed Plover	bird	1995	Bern Convention Appendix 2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b
Chlidonias niger	Black Tern	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Circus aeruginosus	Eurasian Marsh Harrier	bird	2010	Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A RDB Birds - 2
Circus cyaneus	Hen Harrier	bird	2000	Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A RDB Birds - 5
Circus pygargus	Montagu's Harrier	bird	2000	Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A RDB Birds - 2
Columba oenas	Stock Dove	bird	2000	Birds Directive Annex 2.2
Columba palumbus	Common Wood Pigeon	bird	2010	Birds Directive Annex 2.1
Corvus frugilegus	Rook	bird	2000	Birds Directive Annex 2.2
Coturnix coturnix	Quail	bird	1996	Birds Directive Annex 2.2 RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Crex crex	Corn Crake	bird	1998	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 3 UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 1 Part 1)

Scientific name	Common name	Taxonomic group	Year	Designated as
Cuculus canorus	Cuckoo	bird	2000	UK Biodiversity Action Plan priority species
Cyanistes caeruleus	Blue Tit	bird	2010	Bern Convention Appendix 2 Bern Convention Appendix 2
Cygnus atratus	Black Swan	bird	2010	Bonn Convention Appendix 2
Cygnus columbianus	Bewick's Swan	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b UK BAP Non-strict Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Cygnus cygnus	Whooper Swan	bird	2000	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB - Internationally Important RDB Birds - 1b RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Cygnus olor	Mute Swan	bird	2010	Birds Directive Annex 2.2 Bonn Convention Appendix 2
Delichon urbica	House Martin	bird	2002	Bern Convention Appendix 2
Dendrocopos major	Great Spotted Woodpecker	bird	2009	Bern Convention Appendix 2
Dendrocopos minor	Lesser Spotted Woodpecker	bird	1999	Bern Convention Appendix 2 UK BAP Non-strict
Emberiza calandra	Corn Bunting	bird	2005	UK BAP Non-strict
Emberiza schoeniclus	Reed Bunting	bird	2010	Bern Convention Appendix 2 UK Biodiversity Action Plan priority species
Erithacus rubecula	European Robin	bird	2009	Bern Convention Appendix 2
Falco columbarius	Merlin	bird	1985	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A RDB Birds - 5 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Falco peregrinus	Peregrine	bird	1998	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A RDB - Internationally Important RDB Birds - 1a Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Falco subbuteo	Hobby	bird	2000	Bern Convention Appendix 2 Bonn Convention Appendix 2 EC CITES Annex A Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Falco tinnunculus	Kestrel	bird	2002	Bern Convention Appendix 2 Bonn Convention Appendix 2 EC CITES Annex A
Fulica atra	Coot	bird	2010	Birds Directive Annex 2.1
Gallinago gallinago	Common Snipe	bird	2006	Birds Directive Annex 2.1 Bonn Convention Appendix 2
Gallinula chloropus	Common Moorhen	bird	2010	Birds Directive Annex 2.2 Bonn Convention Appendix 2
Garrulus glandarius	Jay	bird	1998	Birds Directive Annex 2.2
Gavia stellata	Red-Throated Diver	bird	2000	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 1a RDB Birds - 1b
Grus grus	Crane	bird	2000	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A RDB Birds - 2

Scientific name	Common name	Taxonomic group	Year	Designated as
Haematopus ostralegus	Oystercatcher	bird	2000	Birds Directive Annex 2.2 RDB Birds - 1b RDB Birds - 4b
Hirundo rustica	Swallow	bird	2010	Bern Convention Appendix 2
Lanius collurio	Red-Backed Shrike	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 RDB Birds - 2 UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Larus argentatus	Herring Gull	bird	1997	Birds Directive Annex 2.2 UK BAP Non-strict
Larus argentatus subsp. argenteus	Herring Gull	bird	1999	UK Biodiversity Action Plan priority species
Larus canus	Common Gull	bird	2000	Birds Directive Annex 2.2
Larus fuscus	Lesser Black-Backed Gull	bird	2000	Birds Directive Annex 2.2
Larus marinus	Great Black-Backed Gull	bird	2000	Birds Directive Annex 2.2
Larus melanocephalus	Mediterranean Gull	bird	1998	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 2 RDB Birds - 4a Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Larus ridibundus	Black-Headed Gull	bird	2010	Birds Directive Annex 2.2
Limosa lapponica	Bar-Tailed Godwit	bird	1995	Birds Directive Annex 1 Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b
Limosa limosa	Black-Tailed Godwit	bird	2000	Birds Directive Annex 2.2 Bonn Convention Appendix 2 IUCN (2001) - Lower risk - near threatened RDB Birds - 2 RDB Birds - 4a RDB Birds - 4b UK BAP Non-strict Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Locustella naevia	Common Grasshopper Warbler	bird	2004	UK Biodiversity Action Plan priority species
Lymnocryptes minimus	Jack Snipe	bird	1996	Birds Directive Annex 2.1 Bonn Convention Appendix 2
Mergus albellus	Smew	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2
Mergus merganser	Goosander	bird	2000	Birds Directive Annex 2.2 Bonn Convention Appendix 2
Mergus serrator	Red-Breasted Merganser	bird	1996	Birds Directive Annex 2.2 Bonn Convention Appendix 2
Milvus milvus	Red Kite	bird	2000	Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A IUCN (2001) - Lower risk - near threatened RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Motacilla alba	Pied Wagtail	bird	2010	Bern Convention Appendix 2
Motacilla flava	Yellow Wagtail	bird	2005	Bern Convention Appendix 2 UK BAP Non-strict
Motacilla flava subsp. flavissima	Yellow Wagtail	bird	1997	UK Biodiversity Action Plan priority species
Muscicapa striata	Spotted Flycatcher	bird	2004	Bern Convention Appendix 2 Bonn Convention Appendix 2 UK Biodiversity Action Plan priority species
Numenius	Eurasian	bird	2005	Birds Directive Annex 2.2

Scientific name	Common name	Taxonomic group	Year	Designated as
arquata	Curlew			Bonn Convention Appendix 2 IUCN (2001) - Lower risk - near threatened RDB Birds - 1a RDB Birds - 1b UK Biodiversity Action Plan priority species
Numenius phaeopus	Whimbrel	bird	1996	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 5 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Nycticorax nycticorax	Night Heron	bird	1997	Bern Convention Appendix 2 Birds Directive Annex 1
Oenanthe oenanthe	Wheatear	bird	1996	Bern Convention Appendix 2
Oxyura jamaicensis	Ruddy Duck	bird	2000	Bonn Convention Appendix 2
Pandion haliaetus	Osprey	bird	1996	Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Panurus biarmicus	Bearded Tit	bird	2000	Bern Convention Appendix 2 RDB Birds - 4a Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Parus major	Great Tit	bird	2009	Bern Convention Appendix 2
Parus montanus	Willow Tit	bird	1999	Bern Convention Appendix 2 Bern Convention Appendix 2 UK BAP Non-strict UK BAP Non-strict
Passer domesticus	House Sparrow	bird	2009	UK Biodiversity Action Plan priority species
Passer montanus	Eurasian Tree Sparrow	bird	2005	UK Biodiversity Action Plan priority species
Perdix perdix	Grey Partridge	bird	2005	Birds Directive Annex 2.1 RDB Birds - 3 UK Biodiversity Action Plan priority species
Periparus ater	Coal Tit	bird	2009	Bern Convention Appendix 2
Phalacrocorax carbo subsp. sinensis	Southern Cormorant	bird	2000	Birds Directive Annex 1
Phasianus colchicus	Common Pheasant	bird	2009	Birds Directive Annex 2.1
Philomachus pugnax	Ruff	bird	2000	Birds Directive Annex 1 Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 2 RDB Birds - 4a Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Pica pica	Magpie	bird	2000	Birds Directive Annex 2.2
Picus viridis	Green Woodpecker	bird	1997	Bern Convention Appendix 2
Platalea leucorodia	Spoonbill	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 EC CITES Annex A Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Plectrophenax nivalis	Snow Bunting	bird	1996	Bern Convention Appendix 2 RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Pluvialis apricaria	Golden Plover	bird	2000	Birds Directive Annex 1 Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 5
Pluvialis squatarola	Grey Plover	bird	1996	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b
Podiceps	Black-Necked	bird	2000	Bern Convention Appendix 2

Scientific name	Common name	Taxonomic group	Year	Designated as
nigricollis	Grebe			Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 2 RDB Birds - 4a Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Poecile palustris	Marsh Tit	bird	2009	Bern Convention Appendix 2 UK BAP Non-strict
Porzana porzana	Spotted Crake	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Prunella modularis	Hedge Accentor	bird	2009	Bern Convention Appendix 2 UK BAP Non-strict
Pyrrhula pyrrhula	Bullfinch	bird	2000	UK BAP Non-strict
Rallus aquaticus	Water Rail	bird	2000	Birds Directive Annex 2.2
Riparia riparia	Sand Martin	bird	1999	Bern Convention Appendix 2
Saxicola torquata	Stonechat	bird	2000	Bern Convention Appendix 2
Scolopax rusticola	Woodcock	bird	1995	Birds Directive Annex 2.1 Bonn Convention Appendix 2
Sitta europaea	Nuthatch	bird	1996	Bern Convention Appendix 2
Sterna albifrons	Little Tern	bird	2000	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 1a RDB Birds - 4a Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Sterna hirundo	Common Tern	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1
Sterna paradisaea	Arctic Tern	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 1a
Streptopelia decaocto	Eurasian Collared Dove	bird	2009	Birds Directive Annex 2.2
Streptopelia turtur	Turtle Dove	bird	2000	Birds Directive Annex 2.2 EC CITES Annex A UK Biodiversity Action Plan priority species
Strix aluco	Tawny Owl	bird	2000	Bern Convention Appendix 2 EC CITES Annex A
Sturnus vulgaris	Common Starling	bird	2010	Birds Directive Annex 2.2 UK BAP Non-strict
Tachybaptus ruficollis	Little Grebe	bird	2000	Bern Convention Appendix 2
Tadorna ferruginea	Ruddy Shelduck	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2
Tadorna tadorna	Shelduck	bird	2010	Bern Convention Appendix 2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b
Tringa erythropus	Spotted Redshank	bird	1996	Birds Directive Annex 2.2 Bonn Convention Appendix 2
Tringa glareola	Wood Sandpiper	bird	1996	Bern Convention Appendix 2 Birds Directive Annex 1 Bonn Convention Appendix 2 RDB Birds - 2 RDB Birds - 4a Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Tringa nebularia	Greenshank	bird	1999	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 5 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Tringa ochropus	Green Sandpiper	bird	1999	Bern Convention Appendix 2 Bonn Convention Appendix 2

Scientific name	Common name	Taxonomic group	Year	Designated as
				Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Tringa totanus	Common Redshank	bird	2010	Birds Directive Annex 2.2 Bonn Convention Appendix 2 RDB Birds - 1b RDB Birds - 4b
Troglodytes troglodytes	Winter Wren	bird	2009	Bern Convention Appendix 2 UK BAP Non-strict
Turdus iliacus	Redwing	bird	1996	Birds Directive Annex 2.2 RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Turdus merula	Common Blackbird	bird	2010	Birds Directive Annex 2.2
Turdus philomelos	Song Thrush	bird	2000	Birds Directive Annex 2.2 UK BAP Non-strict
Turdus pilaris	Fieldfare	bird	1998	Birds Directive Annex 2.2 RDB Birds - 2 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Turdus viscivorus	Mistle Thrush	bird	2000	Birds Directive Annex 2.2
Tyto alba	Barn Owl	bird	2009	Bern Convention Appendix 2 EC CITES Annex A RDB Birds - 5 Wildlife and Countryside Act 1981 (Schedule 1 Part 1)
Vanellus vanellus	Northern Lapwing	bird	2010	Birds Directive Annex 2.2 Bonn Convention Appendix 2 UK Biodiversity Action Plan priority species
Anguilla anguilla	European Eel	bony fish (Actinopterygii)	1995	IUCN (2001) - Critically endangered UK Biodiversity Action Plan priority species
Austropotamobius pallipes	Freshwater White-Clawed Crayfish	crustacean	1900	Habitats Directive Annex 5 IUCN (2001) - Endangered UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Calodera riparia		insect - beetle (Coleoptera)	1989	Nationally Notable
Carabus (Morphocarabus) monilis	Necklace Ground Beetle	insect - beetle (Coleoptera)	1990	UK Biodiversity Action Plan priority species
Cercyon (Cercyon) convexiusculus		insect - beetle (Coleoptera)	1990	Nationally Notable
Chrysolina graminis	Tansy Beetle	insect - beetle (Coleoptera)	1990	UK Biodiversity Action Plan priority species
Cypha pulicaria		insect - beetle (Coleoptera)	1988	Nationally Notable
Dasygnypeta velata		insect - beetle (Coleoptera)	1993	Nationally Notable Nationally Notable
Datomicra zosterae		insect - beetle (Coleoptera)	1990	Nationally Notable
Enicmus fungicola		insect - beetle (Coleoptera)	1980	Nationally Notable
Helophorus (Helophorus) strigifrons		insect - beetle (Coleoptera)	1990	Nationally scarce
Heterocerus marginatus		insect - beetle (Coleoptera)	1976	Nationally scarce
Oligella foveolata		insect - beetle (Coleoptera)	1960	Nationally Notable
Oxypoda exoleta		insect - beetle (Coleoptera)	1988	Nationally Notable
Panagaeus cruxmajor	Crucifix Ground Beetle	insect - beetle (Coleoptera)	1992	UK Biodiversity Action Plan priority species
Platystethus (Craetopycrus) nodifrons		insect - beetle (Coleoptera)	1999	Nationally Notable Nationally Notable

Scientific name	Common name	Taxonomic group	Year	Designated as
Scarodytes halensis		insect - beetle (Coleoptera)	1970	Nationally scarce
Sepedophilus testaceus		insect - beetle (Coleoptera)	1976	Nationally Notable
Coenonympha pamphilus	Small Heath	insect - butterfly	2000	IUCN (2001) - Lower risk - near threatened UK Biodiversity Action Plan priority species
Lasiommata megera	Wall	insect - butterfly	1999	IUCN (2001) - Lower risk - near threatened UK Biodiversity Action Plan priority species
Heptagenia fuscogrisea	Heptagenia Fuscogrisea	insect - mayfly (Ephemeroptera)	1986	Nationally Notable
Amphipyra tragopoginis	Mouse Moth	insect - moth	2000	UK Biodiversity Action Plan priority species
Diloba caeruleocephala	Figure Of Eight	insect - moth	1973	UK Biodiversity Action Plan priority species
Orgyia recens	Scarce Vapourer	insect - moth	1997	UK Biodiversity Action Plan priority species
Spilosoma lubricipeda	White Ermine	insect - moth	1973	UK Biodiversity Action Plan priority species
Capsus wagneri		insect - true bug (Hemiptera)	1990	Nationally Notable
Chrysogaster macquarti	Chrysogaster Macquarti	insect - true fly (Diptera)	1990	Nationally Notable Nationally Notable
Colobaea bifasciella		insect - true fly (Diptera)	1996	Nationally Notable
Colobaea distincta		insect - true fly (Diptera)	1993	Nationally Notable
Dolichopus linearis		insect - true fly (Diptera)	1990	Nationally Notable
Euthyneura halidayi		insect - true fly (Diptera)	1990	Nationally Notable
Neoascia geniculata		insect - true fly (Diptera)	1996	Nationally Notable
Orthonevra brevicornis		insect - true fly (Diptera)	1996	Nationally Notable
Pherbellia brunnipes		insect - true fly (Diptera)	1993	Nationally Notable
Pherbellia griseola		insect - true fly (Diptera)	1996	Nationally Notable
Platycheirus perpallidus		insect - true fly (Diptera)	1992	Nationally Notable
Psacadina verbekei		insect - true fly (Diptera)	1993	Nationally Notable
Rhaphium nasutum		insect - true fly (Diptera)	1990	Nationally Notable
Sciomyza simplex		insect - true fly (Diptera)	1993	Nationally Notable
Pellia epiphylla	Overleaf Pellia	liverwort	2008	Nationally scarce
Omphiscola glabra	Mud Pond Snail	mollusc	1986	UK Biodiversity Action Plan priority species
Arvicola amphibius	European Water Vole	terrestrial mammal	1975	UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Erinaceus europaeus	West European Hedgehog	terrestrial mammal	1999	RDB - Internationally Important UK Biodiversity Action Plan priority species
Lepus europaeus	Brown Hare	terrestrial mammal	2002	UK Biodiversity Action Plan priority species

Scientific name	Common name	Taxonomic group	Year	Designated as
Lutra lutra	European Otter	terrestrial mammal	2011	Bern Convention Appendix 2 EC CITES Annex A Habitats Directive Annex 4 IUCN (2001) - Lower risk - near threatened RDB - Internationally Important Statutory Instrument 2716- The Conservation (Natural Habitats etc) Regulations 1994. Schedule 2 UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Micromys minutus	Harvest Mouse	terrestrial mammal	1997	UK Biodiversity Action Plan priority species
Myotis daubentonii	Daubenton's Bat	terrestrial mammal	2010	Bern Convention Appendix 2 Bonn Convention Appendix 2 Habitats Directive Annex 4 RDB - Internationally Important Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Myotis mystacinus	Whiskered Bat	terrestrial mammal	1999	Bern Convention Appendix 2 Bonn Convention Appendix 2 Habitats Directive Annex 4 Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Pipistrellus	Pipistrellus	terrestrial mammal	1987	Bonn Convention Appendix 2
Pipistrellus pipistrellus	Pipistrelle	terrestrial mammal	2002	Bern Convention Appendix 2 Bonn Convention Appendix 2 Habitats Directive Annex 4 RDB - Internationally Important Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Pipistrellus pipistrellus 45kHz	45 Khz Pipistrelle	terrestrial mammal	1999	Bonn Convention Appendix 2 Bonn Convention Appendix 2 RDB - Internationally Important RDB - Internationally Important
Pipistrellus pipistrellus 55kHz	55 Khz Pipistrelle	terrestrial mammal	1994	Bern Convention Appendix 2 Bonn Convention Appendix 2 Habitats Directive Annex 4 RDB - Internationally Important UK Biodiversity Action Plan priority species
Plecotus	Long-Eared Bat Species	terrestrial mammal	1987	Bonn Convention Appendix 2

Scientific name	Common name	Taxonomic group	Year	Designated as
Plecotus auritus	Brown Long-Eared Bat	terrestrial mammal	1983	Bern Convention Appendix 2 Bonn Convention Appendix 2 Habitats Directive Annex 4 RDB - Internationally Important UK Biodiversity Action Plan priority species Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)
Vespertilionidae	Bats	terrestrial mammal	2001	Bonn Convention Appendix 2 Statutory Instrument 2716- The Conservation (Natural Habitats etc) Regulations 1994. Schedule 2 Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (killing/injuring)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.1 (taking)) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.2) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.4b) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5a) Wildlife and Countryside Act 1981 (Schedule 5 Section 9.5b)

APPENDIX 2 **AGE ESTIMATION OF THE VETERAN TREE (T1) ADJACENT TO THE CART WASH POND AT SUTTON FARM (based on White, 1998)**

The age of the veteran horse chestnut tree (T1) on the edge of the cart wash pond at Sutton Farm was estimated using Tables 1 and 2 as follows:

Tree age estimation of T1 from stem diameter measurement (for an average site)

<table>
<tr><td colspan="2">Tree name:
Horse chestnut (T1 – Sketch 1)</td><td colspan="2">Scientific name:
Aesculus hippocastanum</td></tr>
<tr><td colspan="2">Location:
Cart wash pond at Sutton Farm</td><td colspan="2">Grid Reference:
SE 705 450</td></tr>
<tr><td>Stem girth (cm):
483</td><td>Stem diameter (cm):
153.7</td><td>Stem radius (r) (cm):
76.87</td><td>Total base area (BA) (cm^2):
18563.661
(r x r x 3.14159)</td></tr>
<tr><td colspan="4">Core category (Table 1a – Appendix. 1):
Average site</td></tr>
<tr><td colspan="3">Core age (years) (Table 1a – Appendix 1):
40/5</td><td>Core ring width (mm):
5</td></tr>
<tr><td colspan="3">Core basal area (Table 2 or paragraph 16, 2c – Appendix 1 - cm^2):</td><td>1257</td></tr>
<tr><td colspan="3">Area (CAI) of outer core ring (Table 2 or paragraph 16, 2d - cm^2):</td><td>62.0</td></tr>
<tr><td colspan="3">BA excluding the core (total BA minus core BA – cm^2):</td><td>17306.661 (18563.661 – 1257)</td></tr>
<tr><td colspan="3">Age of outer section of the stem (years):</td><td>279.139
(above divided by CAI of outer core ring)</td></tr>
<tr><td colspan="3">Add core age (years):</td><td>40</td></tr>
<tr><td colspan="3">Add years of decline (see paragraph 16.4):</td><td>Nil</td></tr>
<tr><td colspan="3">Total of last 3 entries (= estimated age of tree/years):</td><td>319 years</td></tr>
<tr><td colspan="3">Planting year (date measured minus estimated age):</td><td>1692</td></tr>
<tr><td colspan="4">Additional notes:</td></tr>
<tr><td colspan="4">Date measured: 26/5/2011</td></tr>
</table>

Tree age estimation of T1 from stem diameter from an exposed site

<table>
<tr><td colspan="2">Tree name:
Horse chestnut (T1 – Sketch 1)</td><td colspan="2">Scientific name:
Aesculus hippocastanum</td></tr>
<tr><td colspan="2">Location:
Cart wash pond at Sutton Farm</td><td colspan="2">Grid Reference:
SE 705 450</td></tr>
<tr><td>Stem girth (cm):
483</td><td>Stem diameter (cm):
153.7</td><td>Stem radius (r) (cm):
76.87</td><td>Total base area (BA) (cm^2):
18563.661
(r x r x 3.14159)</td></tr>
<tr><td colspan="4">Core category (Table 1a – Appendix. 1):
Good site, open grown, sheltered</td></tr>
<tr><td colspan="3">Core age (years) (Table 1a – Appendix 1):
50/5</td><td>Core ring width (mm):
5</td></tr>
<tr><td colspan="3">Core basal area (Table 2 or paragraph 16, 2c – Appendix 1 - cm^2):</td><td>1963</td></tr>
<tr><td colspan="3">Area (CAI) of outer core ring (Table 2 or paragraph 16, 2d - cm^2):</td><td>77.8</td></tr>
<tr><td colspan="3">BA excluding the core (total BA minus core BA – cm^2):</td><td>16600.661 (18563.661 – 1963)</td></tr>
<tr><td colspan="3">Age of outer section of the stem (years):</td><td>213.376
(above divided by CAI of outer core ring)</td></tr>
<tr><td colspan="3">Add core age (years):</td><td>50</td></tr>
<tr><td colspan="3">Add years of decline (see paragraph 16.4):</td><td>Nil</td></tr>
<tr><td colspan="3">Total of last 3 entries (= estimated age of tree/years):</td><td>263 years</td></tr>
<tr><td colspan="3">Planting year (date measured minus estimated age):</td><td>1748</td></tr>
<tr><td colspan="4">Additional notes:</td></tr>
<tr><td colspan="4">Date measured: 26/5/2011</td></tr>
</table>

APPENDIX 2 AGE ESTIMATION OF THE VETERAN TREES (T1) ADJACENT TO THE CART WASH POND AT SUTTON FARM (based on White, 1998)

Calculation of the age of a tree from its girth at breast height.

Core size and the speed of early growth within trees is fairly predictable within a given species group on a particular site type. White (1998) compiled the data from numerous annual ring and stump measurements, using hard data from younger trees on comparable sites. At maturity the ring area (mature state CAI) was then assumed to remain constant until senescence sets in, when ring widths will be reduced to a minimum. White (1998) used such measurements to estimate the age of a range of different tree species as shown in Tables 1 and 2.

Table 1 Tree age and ring width when mature state is reached (based on dendrological records)

Age (years)/ring width mm (first 'mature state' ring)

Core development category	Common/sessile oak	Turkey oak	Red oak	Beech	Sweet chestnut	Walnut	Black mulberry	Ash	Common lime	Horse chestnut	Plane	Yew (see para 5)	Robinia	*Araucaria araucana*	*Pinus nigra*	Tulip tree	*Cedrus deodara*	*Cedrus libani*	Holly	Sycamore
Champion tree potential (ideal site conditions)	70/5	30/10	60/6	80/6					100/5		100/6			60/5	60/6	70/7	40/8			
Good site, open grown, sheltered	80/4	40/6	70/5	70/5	70/5	55/4	40/3	50/5	80/5	50/5	60/6		70/5	45/5	70/5	50/6	50/7	60/6		80/6
Average site, garden, parkland	100/35	50/5	80/4	70/4	60/5	50/4	30/3	70/4	70/5	40/5	70/5	60/4	80/4	60/4	70/5		50/6			60/6
Churchyard		40/6		60/4		50/4			80/5	50/5	70/5	55/3	80/4							60/6
Poor ground and/or some exposure	120/3			60/4	40/5	50/3						40/3	50/3	60/3	60/5	50/4		80/4	80/3	60/5
Woodland boundary pollard, or open woodland	100/3.5							20/5												
Inside woodland	70/2.5			120/3	100/3			100/3				30/3							60/4	

Notes: This table has been compiled from variable amounts of information presently available. It is incomplete and will be subject to revision as further trees of known date are measured. Individual local category additions can be compiled in the light of special investigations (see Table 1b).

Table 2. Core development, age and ring width when optimum crown size is reached, and the associated mature state CAI

Age/ring mm (From Table 1)	Core radius cm	Basal area cm^2	CAI cm^2
70/2.5	17.5	962	27.3
30.3	9	254	16.7
40/3	12	452	22.3
50/3	15	707	28.0
55/3	16.5	855	30.8
60/3	18	1018	33.6
80/3	24	1810	45.0
100/3	30	2827	56.3
120/3	36	4072	67.6
100/3.5	35	3848	76.6
40/4	16	804	39.7
50/4	20	1257	49.8
55/4	22	1521	54.8
60/4	24	1810	59.8
70/4	28	2463	69.9
80/4	32	3217	79.9
40/5	20	1257	62.0
45/5	22.5	1590	69.9
50/5	25	1963	77.8
60/5	30	2827	93.5
70/5	35	3848	109.2
80/5	40	5027	124.9
100/5	50	7854	156.3
40/6	24	1810	89.3
50/6	30	1827	112.0
60/6	36	4072	134.6
76/6	42	5542	157.2
80/6	48	7238	179.8
90/6	54	9161	202.4
100/6	60	11310	225.1
50/7	35	3848	152.4
60/7	42	5542	183.2
70/7	49	7543	214.0
40/8	32	3217	158.8
30/10	30	2827	185.4

Notes: This table circumvents the need to calculate BA and CAI for the categories listed in Table 1a. CAI has been calculated by subtracting one ring width from the radius, to give a new basal area, and subtracting this from the full core basal area indicated.

APPENDIX 3
NATURAL ENGLAND PROJECT BRIEF

Project Brief for a Level 2 Archaeological and Historical Survey of the Cart Wash Pond at Sutton Farm, Sutton-on-Derwent, East Yorkshire.

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September 2009

1.1 Introduction

This pond survives in Sutton Farm farmyard east of Sutton Hall at NGR SE705 450; it is not recorded on current HER records for the site but is clearly of some age. The pond is of interest due to its brick walling (that is currently in disrepair). It is holding water really well however we do not know what lies beneath the silt bottom in terms of a lining. Someone working at the site recently was renewing some fencing adjacent to the pond and beneath the farm track they came across a brick/cobble pathway that appeared to lead down into the pond.

Sutton Farm was in the Countryside Stewardship Scheme (CSS) for 10 years prior to coming into the Higher Level Stewardship Scheme (HLS) on the 1 October 2009. The pond has not been included in any annual management at this point. The overall aim of this project is to facilitate restoration and re-use of this pond. Re-use will primarily be as a landscape feature and wildlife focus.

It would be good to see the vegetation around the edges of the pond reduced (especially where non-native trees such as sycamore now exist). The walls around the pond will need rebuilding. With this in mind we are commissioning this assessment and survey of the site, followed by the restoration.

The first stage of this will require an Archaeological Watching brief. The pond will need to be drained carefully using appropriate technology that will not disturb the lining (as it is watertight). The pond will need cleaning out and then the basic structure can be recorded highlighting the areas that need to be repaired. A wildlife survey will also be needed in terms of Great Crested Newts.

The historic integrity of the pond must be retained.

1.2 Objective of the Project

- To produce an archaeological and historical survey of the Cart Wash at Sutton Farm.
- To prepare proposals covering oversight of the restoration of the pond where required and removal of some of the surrounding vegetation.

1.3 Objectives of this Brief for an Archaeological Survey

- This brief should be used to obtain at least three itemised quotes for the preparation and production of the proposed work. Quotations should be based on the requirements set out in this brief

- The submission must also include:

    - Identification of the proposed consultant to undertake the work and an outline of their professional expertise in survey work of

this type (the final decision on the consultant employed will rest with Natural England).

- A draft project timetable for the completion of the work.

2. The Scope of the Survey

- The survey should focus on the pond area and should, in so far as current vegetation allows, investigate and record all historic features within the area.

  A Level 2 survey as defined in ***Understanding the Archaeology of Landscapes, English Heritage 2007*** is required. This should aim to map the extent and general trend of surviving earthworks. Points of detail will require particular attention.

  It is anticipated that the field survey will be conducted over winter 2009/10 with reporting prepared shortly after. The whole project including the restoration works should be completed by September 2010.

- The record for each feature will consist of:
  1. a description of the physical remains,
  2. a presentation of the history of the monument based on key archive material, particularly estate records held in the collections of Hull University.
  3. a grid reference provided by navigation/mapping grade GPS (linear features will normally require more than one grid reference to show length/direction),
  4. a photographic record must be maintained. A set of high-resolution digital images must also be prepared, and may be used as the basis of illustrating the report. All photos must have an appropriate scale visible.
  5. an interpretation of the feature(s) where possible,
  6. an assessment of the significance of each feature (local/regional/national)
  7. Identify any threats

- The location of all features will be clearly located on a map, or maps at a scale of 1:2500
- The contractor should liaise with the East Yorkshire Historic Environment Record and Natural England prior to commencing fieldwork to ensure that existing data is used to inform the survey
- Where appropriate historic maps, particularly old editions of the Ordnance Survey maps should be used to aid interpretation.

3. Content of the Survey Report

3.1 Summary

A short concise (executive) summary of the aims of the project and the main findings. Including contractor & client details, date work carried out & under what conditions.

3.2 Site Location and Description

This section must include a location map of the survey area at a suitable scale to locate the site within the county and a more detailed site location map with surrounding geographic details. A central grid reference to a minimum of 8 figures must be given for the site. A short description of the topography and current land uses must also be included.

3.3 Analysis

- Include a brief summary of the main types and periods of archaeological feature recorded and their significance. This should be cross referenced with the maps and the inventory.
- identify the features / subject areas with most potential for public interpretation,
- identify the features most at risk of damage or deterioration and suggest management which would mitigate this,

3.4 Inventory

A clear numbered list of features detailing their NGR location to a minimum of 10 figures, description, and interpretation. Where appropriate features in the inventory should be cross referenced with the County Historic Environment Record

3.5 Maps

These should be at a minimum 1:1250 and should be cross-referenced against all the features in the inventory. Maps must include geographical details so that locations are easily identifiable.

3.6 Photographic record

There must be a digital photographic record of each feature in the report which must be clearly cross-referenced with the inventory. This may be submitted in a digital format, eg. on a CD, accompanying the hard copy report.

3.7 Reporting Requirements

Natural England will require 2 copies of the Survey in a bound A4 printed and bound format. A full digital copy of the report should also be submitted to them. A full copy of the report must also be submitted to the Client. An additional A4 bound copy of survey must be submitted to the East Yorkshire Historic Environment Record (HER) at the County Council. Finally a digital copy of the report in PDF format must also be included for the HER. Both copies must be sent to the following address on completion of the project:

Humber Archaeology Partnership
Sites and Monuments Record
The Old School
Northumberland Avenue

Hull
HU2 0LN

A database of records must be submitted with the final report to the local HER. The Database format should be compatible with MIDAS xml which forms the industry standard. The data structure of the records should be created according to the latest version of MIDAS which is MIDAS Heritage. This should also include providing metadata so that they have the background information e.g. scale of data capture.

ArcView and MapInfo are suitable GIS formats for us to import, but the HER would like to agree a licence with the copyright body to allow us to give out the data to enquirers once it is on the HER.

3.8 OASIS Upon completion of the work, the archaeological contractor should make their work accessible to the wider research community by submitting digital data and copies of reports online to OASIS (the Online Access to Index of Archaeological Investigations (OASIS) Project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large scale developer funded fieldwork

3.9 Site Archive: The site archive comprising the original paper records and plans, photographs, negatives etc, should be deposited in the appropriate museum at the completion of post-excavation. This should be in accordance with County Archaeological Archive policy, a guidance note on which can be obtained from the East Yorkshire County HER.

3.10 Health and Safety: Contractors are expected to abide by the *1974 Health and Safety Act* and its subsequent amendments as stated in the *Construction and Design Management Regulations 1994*. Appropriate provision of first aid, telephone and safety clothing as described in the *SCAUM* manual on archaeological health and safety must be followed. The project must have a nominated safety officer.

3.11 Restoration - A proposal for restoration of the pond at Sutton Farm should be prepared focussing on required materials, sources, methods and costings. In considering the restoration the following factors should be taken into account:-

- any restoration should respect the significance and importance of the pond and not cause major impact on its historic form.
- the site will not be secured and will not be in everyday use.
- materials used should, wherever possible, be locally sourced and as sustainable as possible.
- water supply to and from the pond will need investigation and confirmation.

3.12 Wildlife Survey - Identify the location of any wildlife species which use the pond either seasonally or throughout the year and consider their

requirements and mitigation, and the legal obligations under the relevant wildlife legislation, when compiling the plan and scheduling of works.

If protected species are found, a licence may be needed before work can take place. Certain species using a building may be protected under the UK Wildlife & Countryside Act (1981) and/or European wildlife legislation.
Species lists can be found at:
http://www.naturalengland.org.uk/conservation/wildlife-management-licensing/habsregs.htm
Further advice on this could be provided by the Natural England office.

APPENDIX 4
EDAS METHODS STATEMENT

LEVEL 2 ARCHAEOLOGICAL AND HISTORICAL SURVEY, AND GREAT CRESTED NEWT SURVEY, THE CART WASH POND, SUTTON FARM, SUTTON ON DERWENT, EAST YORKSHIRE

EDAS METHODS STATEMENT

Introduction

A Level 2 archaeological survey (as defined by English Heritage 2007) is required of a cart wash pond at Sutton Farm, Sutton on Derwent, East Yorkshire (NGR SE705450), prior to its restoration as a wildlife and landscape feature. A Great Crested Newt survey is also required. The site is not currently statutorily protected, nor is it recorded on the Humber SMR. The work would be wholly funded by Natural England.

Background Information

Little is currently known about the site, and part of the project involves the examination of readily-available documentary, historical and cartographic sources in local record offices.

Objectives of the Project

The objectives of the project are:
- to produce an archaeological and historical survey of the cart wash;
- to prepare a Great Crested Newt survey of the cart wash;
- to prepare proposals for an archaeological watching brief during subsequent restoration and vegetation removal.

Survey Methodology

Desk-based research

A certain amount of documentary research is required for this project, from readily available sources.

It is already known that the site is not recorded on the Humber Archaeology Partnership's Sites and Monument Record (the equivalent of the County Historic Environment Record) and English Heritage's National Monuments Record. However, the Humber Sites and Monuments Record will be consulted for information regarding any known sites in the immediate vicinity, including aerial photographs.

The East Riding Archive Office, based in Beverley, and the newly-opened Hull History Centre will be consulted for information relating to the site and its immediate vicinity. Other research will be undertaken in local libraries for any other historical information that might be relevant to the site.

Information from specialist consultees such as the North and East Yorkshire Ecological Data Centre would also be collated to inform the subsequent Wildlife Survey.

Detailed archaeological site survey

A Level 2 survey of the site and its immediate environs would be carried out to record the position and form of all features considered to be of archaeological and/or historic interest.

This survey would be carried out at a scale of 1:200 (or larger/smaller depending on the actual size of the cart wash) using traditional hand survey techniques. Sufficient information would be

gathered to allow the survey area to be readily located through the use of surviving structures, fences, walls, water courses and other topographical features. The survey would record the position at ground level all structures, wall remnants and revetments, earthworks, water courses, paths, stone and rubble scatters, ironwork, fences, hedges and other boundary features, and any other features considered to be of archaeological or historic interest.

The resulting site survey would be produced at a scale of 1:200 (or larger/smaller depending on the actual size of the cart wash) and presented as an interpretative hachure plan using conventions analogous to those used by English Heritage (1999; 2007, 31-35). Larger scale plans, at 1:10,000 and 1:2,500 scale, would be used to put the survey area into context (OS map bases to be provided by client / Natural England).

Each identified site or component within the survey area would be given a unique number and individually described. This description would include dimensions, plan, form, function, date, sequence of development etc, locational information (including ten figure grid references obtained from OS map bases or hand-held GPS systems), a preliminary interpretation of the site, extant mention of relevant documentary, cartographic or other evidence, and management details such as an assessment of current condition and threats.

The site and any other relevant elements would also be photographically recorded using a digital camera with 10m megapixel resolution. English Heritage photographic guidelines would be followed (English Heritage 2007, 14) and each photograph would normally be provided with a scale. More general digital photographs would also be taken showing the context of the sites. All photographs would be clearly numbered and labelled with the subject, orientation, date taken and photographer's name, and would be cross referenced to digital files etc.

It is envisaged that the Phase 2 archaeological survey would be completed within a single day, with two people.

Great Crested Newt survey

It is possible that Great Crested Newts, a protected amphibian, may breed in the cart wash pond. To ensure the continued welfare of any local Great Crested Newt population, standard methods would be used to detect their presence (or not), as recommended by Natural England (formerly English Nature) in their 2004 publication “Great Crested Newt Guidelines”. A minimum of four separate visits would be needed to determine presence/absence of Great Crested Newts, two of which should be undertaken at some point between mid-April to Mid-May 2010. Should Great Crested Newts be found, then an impact assessment of the pond restoration proposals, together with an appropriate mitigation strategy, would be included in the main report.

Phase 1 Habitat survey

For a Great Crested Newt Method Statement, habitat information on the pond and adjacent terrestrial vegetation would be required. A Phase 1 Habitat Survey of the holding would therefore be undertaken using the standard methodology devised by Natural England. The vegetation within the study area would be mapped as far as possible onto 1:1250 (or larger) scale map using standard alphanumeric codes, which can be used to produce a coded habitat map. Further information would be available in the form of target notes which provide supplementary information on species composition and structure, evidence of management, habitats too small to map, and transitional or mosaic habitats. This information would be augmented by reference to a tree survey and other topographic and/or substrate features where vegetation is not the dominant component of the habitat.

This survey would ideally be undertaken between late April-September 2007 to ensure maximum identification of species. In this case, however, a single site visit would be undertaken in May-June 2010. Notes would also be made on any other species seen on site, including any tracks or

signs of mammals, birds and invertebrates. It is especially important to highlight information on other protected species, such as badgers and water voles, as well as Red List birds of high conservation priority.

Proposals for restoration

An important element of the project is the drawing up of proposals for restoration of the cart wash. It is accepted that any restoration should respect the significance and importance of the pond (as identified by the previous survey work) and that it should not result in a major impact on the historic farmstead. The site would not be secure, and will not be in everyday use, and locally sourced sustainable materials should be used for the restoration. It is also possible that the water supply to and from the pond will need to be investigated and confirmed.

Liaison will take place with the landowner and Natural England to determine the most appropriate form of restoration, and what methods might be used to achieve restoration. The impacts of any restoration on the historic structure would then be assessed, in terms of pre- and mid- activity impacts as well as long-term impacts. An archaeological impact strategy would consider any damage which might occur to the historic fabric of the pond during restoration, and what archaeological works might be required to mitigate that damage (e.g. an archaeological watching brief during restoration to record the presence of any pond lining). An ecological mitigation strategy would indicate how the impacts of any restoration work would be addressed in order to ensure no detriment to the maintenance of, for example, the population of Great Crested Newts at a favourable conservation status. This would include information on best practice habitat creation, restoration and/or enhancement proposals, including information on the number, location, size, profile and planting in the restored pond. In each case, the information would be sufficient to allow an assessment of their likely value to any notable wildlife species.

It is recommended that the results of the Great Crested Newt survey (see above) be available in a full report at least three months prior to the commencement of any restoration work. This is to ensure that there is enough time available to apply for, and be granted, a Great Crested Newt Licence from Natural England (should this be required) before the start of any works. The aim would be to ensure that an approved mitigation statement is available for the continued welfare of the existing local great crested newt population, and that any unnecessary and costly delays to the possible commencement date(s) of the proposed restoration works are avoided.

It should be noted that the proposals for pond restoration and any resulting mitigation measures would only be general or outline in nature. For example, recommendations might be made for the removal of vegetation around the margins of the pond, for the rebuilding of the pond walls, and/or enhancement with new vegetation. The provision of detailed costs, and the preparation of any detailed documents or specifications to achieve these recommendations (e.g. brickwork consolidation or replacement, planting plans etc) would lie outside the scope of this project.

Survey Products

Archive survey report

An archive survey report for the site will be produced, based on the identified numbered sites or components. The report will assemble and summarise the available evidence for the survey area in an ordered form, synthesise the data, comment on the quality and reliability of the evidence, and how it might need to be supplemented by further site work or desk-based research.

It is expected that the report would include (as appropriate):

- a contents list;
- acknowledgements;
- a non-technical executive summary;

- site code/project number;
- dates of fieldwork visits;
- national grid reference and address;
- overall site plan;
- statutory designations;
- a brief account of the project plan, research objectives, survey methodology, procedures and equipment used;
- details of the historical and archaeological background to the site;
- an account of the overall form and development of the site and of the evidence supporting any interpretation;
- the results of the ecological surveys;
- preliminary conclusions, including an assessment of the importance of the findings in relation to the other remains on the site and in the region as a whole;
- details of any identified management issues;
- outline recommendations for the restoration of the pond, including any additional archaeological or ecological survey work that might be required prior to or during restoration;
- a bibliography and list of sources consulted;
- selected colour digital images, at no less than 5" by 4";
- selected figures e.g. historic maps and plans;
- final survey drawings, reduced to A4 or A3 size.

The archive survey report would also contain various appendices, to include photographic registers and catalogues, and a copy of this Methods Statement, together with the details of any departures from that design.

The archive survey report would also include the results of the ecological surveys, as a specific chapter. The purposes of this part of the report would be to evaluate the fauna and flora of the pond according to their national, regional, district, parish and/or local ecological value. Thus, relevant information from UK and Local Biodiversity Action Plans on priority habitats and species within a national and local context respectively would be summarised. The report would therefore include detailed descriptions of the survey results for Great Crested Newts and any other notable species and/or habitat feature, illustrated on 1:1250 (or larger) scale maps. Sufficient information would also be included in these descriptions to enable the submission of an application for a licence from Natural England in respect of, for example, Great Crested Newts, to undertake the proposed restoration works. Therefore, the ecological survey report would include pre-existing information on any Great Crested Newts at the site, their status in the local/regional area, a habitat description, a description of the field survey and an interpretation and evaluation of the results.

One draft copy of the archive survey report would be made available for discussion with the client and/or Natural England. Four copies of the final approved survey report would then be provided in hard copy format (comb bound reports), two for Natural England and one each for the client and the Humber SMR. All bodies would also receive a CD containing electronic copies of the report (as pdf files) and digital photographs etc.

Archive deposition

A properly ordered and indexed project archive (paper, magnetic and plastic media) would be deposited with the appropriate organisation (East Riding of Yorkshire Museum Service) at the end of the project. It is expected that the archive will contain field and final ink drawings, written accounts, structured catalogues and indices, and project management records. Any drawn records would be presented as wet ink plots on standard "A" size matt surface stable polyester film sheets.

OASIS Compliance

EDAS subscribe to English Heritage's OASIS (Online Access to Index of Archaeological Investigations) project, and all EDAS projects are fully OASIS compliant. Prior to the start of the fieldwork, an OASIS online record will be initiated and key fields completed on Details, Location and Creators forms. All parts of the OASIS online form will be subsequently completed for submission to English Heritage and the Humber SMR. This will include an uploaded pdf version of the entire report.

Modifications

The programme of recording work may be modified in accordance with the professional judgement of the staff undertaking the work, insofar as the overall provisions and objectives of this methods statement would not be changed. Any variations in the project would be discussed and agreed in advance with the client and Natural England.

Health and Safety, and Insurance

EDAS would comply with the Health and Safety at Work Act of 1974 while undertaking the project. A full copy of their Health and Safety Policy is available on request.

The site is privately owned and EDAS would indemnify the landowners in respect of their legal liability for physical injury to persons or damage to property arising on site in connection with the survey, to the extent of EDAS's Public Liability Insurance Cover (£5,000,000). A risk assessment would be produced prior to any site work if required.

Programming and Resources

The project would be undertaken by EDAS, who are registered as an archaeological organisation with the Institute for Archaeologists.

The project would be undertaken by Ed Dennison and Shaun Richardson of EDAS. Both have some 20 years experience in non-intrusive earthwork and topographical survey, and they have undertaken numerous walkover and detailed surveys of specific monuments and of areas of historic landscape throughout Yorkshire. These surveys have included land uses of all types, and in addition to identifying a wide range of archaeological remains, detailed management strategies and recommendations have been proposed.

The nature of the ground conditions means that it is advisable that the site survey work is undertaken during periods of low vegetation growth. The site work would therefore ideally be carried out over the winter of 2009/2010 (depending on speed of commission and other access arrangements), with reporting complete by early summer 2010.

The wildlife and ecological surveys would be undertaken by Dr Madeline Holloway, Director of EINC (Ecological Information Network Consultants), working as a sub-consultant to EDAS. Dr Holloway is a full member of the Institute of Ecology and Environmental Management (MIEEM) and has over 20 years experience of conducting ecological work including botanical surveys, Phase 1 Habitat Surveys, various types of bird surveys and specialist surveys for protected species such as badgers, water voles, great crested newts, otters, white-clawed crayfish and bats. She is holds a bat handler's licence, great crested newt licence and a white-clawed crayfish licence, and is currently applying for a Barn Owl Licence. Details regarding the optimal times for the great crested newt and other surveys are outlined in the survey methodology section above.

References

English Heritage 1999 *Recording Archaeological Field Monuments: A Descriptive Specification*

English Heritage 2007 *Understanding the Archaeology of Landscapes: A Guide to Good Recording Practice*

Ed Dennison, EDAS,
29 January 2010