ECOLOGICAL BASELINE STUDY OF LAND NORTH-WEST OF STALLINGBOROUGH

FINAL

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ECOLOGICAL BASELINE STUDY OF LAND NORTH-WEST OF STALLINGBOROUGH

1 INTRODUCTION

1.1 A proposal to create a link road between the A1173/A180 junction and the B1173 Stallingborough Road is being taken forward by North East Lincolnshire Council. In order to secure funding for the project, an evaluation document is to be submitted to the Department for Transport. To provide a baseline for the identification and quantification of potential ecological impacts associated with this development, a desk study and a range of field surveys have been carried out to cover all three of the route options under consideration. This report describes these surveys and provides the ecological baseline for the assessment.

1.2 English names for species are used throughout the text with the scientific name also given in the text for species not found on the site during the surveys. Both English and scientific names for plant species are as given by Stace, 1997. A full list of all species recorded from the site, with scientific names, is given in Appendix 1. For statutorily protected species recorded on or considered likely to use the site, a summary of the legal protection afforded by the Wildlife and Countryside Act (1981 and as amended) and by the Habitats Regulations 1994 is given in Appendix 2.

2 METHODS

2.1 DESK STUDY

2.1.1 A data search was undertaken in parallel with the field surveys to identify existing records of rare, scarce, protected or locally important species, including those for which a Biodiversity Action Plan (BAP) has been prepared, within a 5km radius of a central point of the three proposed routes. Information pertaining to sites of International Importance (Special Areas for Conservation, Special Protection Areas or Ramsar sites) within 10km of the study area, or of Sites of Special Scientific Interest (SSSI) and other statutory or non-statutory sites of local biodiversity value within a 5km radius of the centre of the proposed routes was also requested.

2.1.2 Information on the above was sought from:

- Natural England (www.natureonthemap.org.uk);
- North East Lincolnshire Council;
- The Lincolnshire Environmental Records Centre;
- The National Biodiversity Network (www.nbn.org.uk);
- The Lincolnshire Bird Club Database.

2.1.3 The Natural England website provided locations and citations for internationally and nationally important sites within the study radius. The North East Lincolnshire Tree Officer provided a list of trees with Tree Protection Orders within the area of search.

2.1.4 The Lincolnshire Environmental Record Centre provided a list of the non-statutory sites of biodiversity interest within 5km of the study area, both Sites of Nature Conservation Importance within the historic county, and North East Lincolnshire's Sites of Nature Conservation Value. They also provided a list of important species for the study area. The NBN Gateway website did not add any further species to this list.

2.1.5 The Lincolnshire Bird Club Database provided information on Schedule 1 breeding species, and on BAP and red list bird species breeding and wintering in the study area. It has been agreed that actual breeding locations for Schedule 1 species are to be treated as confidential.

2.1.7 The UK and Lincolnshire Biodiversity Action Plans (Anon 1998 and 1999; LWT, 2006) were also consulted for details of the habitats and species therein, and other websites (listed in section 6) were visited for additional information where relevant. The information produced by all these sources has been included where relevant in the following descriptions.

2.2 FIELD SURVEYS

2.2.1 The surveys were carried out on 22 and 23 March 07 by an experienced ecologist with a field assistant. The survey area comprised land west of Stallingborough, between North Beck Drain and the B1173 extending northwards to approximately 250m north of the A180. The following assessments and surveys were carried out.

2.2.2 **Habitats, Plant Communities and Plant Species** All habitats and plant communities within the study area were recorded and mapped. All hedges within and on the boundary of this area were assessed against the criteria for wildlife and landscape given in the Hedgerow Regulations 1997.

2.2.3 **Amphibians** All waterbodies within the survey area were assessed for their potential to support great crested newts *Triturus cristatus*. Drain margins and adjacent terrestrial habitats were searched for the presence of rubble, logs and other debris that could be used as a sheltering refuge by amphibians. Where encountered, these items were carefully lifted and checked before returning them to their original footprint.

2.2.4 **Reptiles** Habitats were assessed for their potential to support reptiles. Suitable habitat comprises structurally diverse vegetation and (small-scale) topography, supporting good numbers of invertebrates. There must be both open areas for basking, particularly on south-

facing slopes, and denser patches to provide shelter from predators (Beebee and Griffiths, 2000).

2.2.5 **Mammals** A visual inspection was made of all trees within the survey area for the presence of features able to support roosting bats. Such features include disused woodpecker holes, cracks and splits in boughs, delaminating bark and ivy-clad limbs (English Nature, 2004). All man-made structures encountered were also examined for their potential to support bats.

2.2.6 All waterbodies on the site were searched for signs of the presence of water voles *Arvicola terrestris*. Such signs include burrows, runs, droppings, latrines and typical feeding signs, including piles of cut vegetation.

2.2.7 A search was made for signs of the presence of badgers. These include setts, latrines, dung pits, pathways, hairs, footprints and feeding signs such as snuffle holes and scratched trees/logs.

2.2.8 **Birds** Habitats within the study area were assessed for their potential to support breeding birds listed on Schedule 1 of the Wildlife and Countryside Act 1981. All birds seen or heard on any visit were recorded.

3 RESULTS

3.1 SURROUNDING AREA CONTEXT

3.1.1 The study area lies within the Outmarsh sub-area of the Lincolnshire Coast and Marshes Character Area. This is a flat and predominantly open coastal plain, characterised by mainly arable fields divided by a network of ditches and larger drains with hedges and woodland both scarce. Much of the northern Outmarsh is under the direct influence of build development.

3.1.2 The Humber Estuary possible Special Area for Conservation (pSAC), as designated under the EU Habitats Directive (92/43/EEC), qualifies for habitats listed on Annex I to this Directive and species listed on Annex II. The Humber Flats, Marshes and Coast Special Protection Area (SPA/pSPA) qualifies under the EU Birds Directive (79/204/EEC) for its internationally important breeding, passage and wintering species and populations, and the Humber Flats, Marshes and Coast Ramsar site/proposed Ramsar site qualifies as a Wetland of International Importance especially as Waterfowl Habitat under Criteria 2, 3, 5 and 6 of the Ramsar Convention. At its nearest point, the estuary lies approximately 3.5km to the north-east of the A180. The boundaries of the Humber Estuary Site of Special Scientific Interest (SSSI) are co-incident with those of the SPA/pSPA, and there are no other SSSI within 5km of the study area.

3.1.3 There are 31 non-statutory sites within 5km of the study area. Of these, 18 are Sites of Nature Conservation Importance, identified by the Lincolnshire Wildlife Trust, and the remaining 13 are on North East Lincolnshire's Register of Sites of Nature Conservation Value. Of the sites closest to the study area, most, such as Stallingborough Fish Ponds, North Moss Lane Meadow, Immingham Wood and the A180 balancing ponds at the minor road crossing close to Immingham, are both very small and lie beyond the A180 carrriageways. Stallingborough Meadows SNCI lies only 200m to the east of North Beck Drain. This was last surveyed in 1988 when it comprised six small meadows with tall hawthorn hedges and a flora typical of unimproved wet grassland. Recent aerial photographs confirm that the meadows to the south of the railway line are still extant.

3.1.4 The only record of great crested newt *Triturus cristatus* supplied by LERC came from a farm pond and adjacent garden pond at Aylesby, 4km south of Stallingborough in 1995, and one or more common lizards *Lacerta vivipara* were found on the Europarc site 4km to the west, in 1999. All records of protected mammals in the locality refer to water voles, which are common and widespread in this area.

3.2 HABITATS AND PLANT COMMUNITIES OF THE STUDY AREA

3.2.1 The land within the development envelope is predominantly large featureless arable fields divided by a network of drains, entirely typical of much of the Outmarsh Natural Area (English Nature, 1998; www.countryside.gov.uk). A habitat map of the survey area is given as Figure 1. Habitat features in this area are numbered on this map for use with the following site description.

3.2.2 In the north-western corner of the survey area is a narrow parcel of tussocky rough grassland (1) dominated by cock's-foot with crested dog's-tail, wild teasel, curled dock, lesser celandine and with large banks of bramble scattered throughout (Photograph 1). Several of these bramble banks have mammal runs entering into them. The southern end of this grass strip appears to have been relatively recently disturbed since it has more bare/mossy areas and three rubble/spoil mounds which have vegetated over. This grassland is bounded on its western edge by a shallow, seasonally wet roadside drain which is choked with bulrush, hard rush, great willowherb and bramble.

3.2.3 Beyond the ditch on the road embankment is a group of young trees comprising silver birch, ak, hawthorn, ash and willow. This strip of grassland is separated from the arable field to the east by a hawthorn box hedge with young standard sycamores (2). This hedge continues southwards and forms the western boundary to two further arable fields. Part of this hedge is backed by a damp/seasonally wet drain choked with tall ruderal vegetation (3).

Photograph 1 Rough grassland strip from the south

Photograph 2 Tree stump on grass bank

3.2.4 At the western end of the A180, both verges are planted with young trees, 3-5m in height. These include sycamore, hawthorn, blackthorn, holly, oak, ash and silver birch (4).

3.2.5 Running south-west from the A180 is a low grass bank (5). At the south-western end is a mature ash stump (Photograph 2) and its fallen dead branches and situated further to the east is an intact mature ash.. A grassy farm track runs along the entire length of the bank (Photograph 3). At the base of this bank is a narrow dry ditch (6) with 1m high banks whose dense vegetation includes cock's-foot, hogweed, cow parsley and common knapweed. This ditch appears to have continued historically on the opposite side of the A180 (7), where it is also dry, narrow and has vegetated over with a similar assemblage of grasses and ruderals. To the south are two further arable fields, both also bounded by north-east/south-west banks with dry ditches (8 and 9: Photograph 4), with the same structure and species composition.

Photographs 3 and 4. Dry ditches with low grass banks dividing the arable fields.

3.2.6 The slopes surrounding the A180 roundabout (11) are densely planted with young trees and scrub including hawthorn, blackthorn, dog rose and alder. The verge ground-flora is a typical assemblage of common roadside species that including cock's-foot, crested dog's-tail, ground-ivy, ragwort, common field-speedwell and ribwort plantain. Scattered bramble, hawthorn and dog rose scrub extends along the verges of the carriageway on both sides.

3.2.7 Towards the south-eastern end of the survey area, on the banks of North Beck Drain (Drain 6), is a line of mature ash trees (14), some of which are decayed and ivy covered (Photograph 5) with an understorey of hawthorn, dog rose, sycamore and alder. A large over-mature sycamore stands in the area of undulating semi-improved pasture (15) to the east of the drain. This pasture is dominated by cock's-foot and has seasonally wet low-lying areas.

Photograph 5 View west across the pasture to a line of mature ash trees on North Beck Drain

3.2.8 This field is bordered to the south by a grown-out and gappy hawthorn and blackthorn hedge with a large bank of dense bramble, beyond which is a smaller field (16) that is ungrazed, damp and tussocky and includes cock's-foot, tufted hair-grass, timothy, hard rush, creeping thistle and great willowherb. The southern boundary of the small field is marked by a grown out hedge comprising blackthorn and hawthorn with occasional bramble, elder and dog rose. Beyond this hedge are two very small ungrazed fields (17 and 18) of similar species composition, separated by a damp ditch vegetated with tall ruderals.

3.2.9 A similar outgrown hedge (19) of blackthorn, hawthorn and elder with standard ash trees and patches of dog rose and bramble in its gappy stretches, separates the pasture fields from arable fields to the west. A rubble pile vegetated over with grasses and tall ruderals is present along its southern section and a sparsely vegetated seasonally damp ditch with shallow banks runs for a short section beside its northern end. A planted strip of young roadside trees (20) is present on the southern edge of the survey area. Planted species include hawthorn, ash, field maple, hazel and silver birch.

3.3 WET DRAINS

Drain 1

3.3.1 This short drain is situated in the north-west corner of the survey area and runs south-west from the A180. The steep banks are 2-3m in height and are dominated by cock's-foot with common nettle, ribwort plantain, creeping buttercup and bramble. The channel is only approximately 500mm wide and has a water depth of around 200mm. Emergent and aquatic vegetation comprises water figwort, great willowherb, fool's water-cress and water starwort.

Drain 2

3.3.2 This drain is continuous along most of the length of the south side of the A180. The banks are 2-3m in height with a 45° incline and a channel width of approximately 1.5m. Scattered hawthorn and ash is present along the bank tops and channel vegetation includes bulrush, hard rush, water figwort, brooklime and fool's water-cress.

Drain 3

3.3.3 This is the soke drain on the north side of the A180. Its banks are approximately 2m high, with scattered scrub and tall ruderals. The narrow channel is littered with debris from the road. Vegetation includes bulrush, hard rush, nettle and great willowherb.

Drain 4

Photograph 6 Mid section of Drain 4

Photograph 7 Eastern end of Drain 4t

3.3.4 This drain divides the large central block of arable and terminates at a culvert into North Beck Drain. At its north-west end it is shallow and choked with grasses, ruderals and bramble and

is probably only seasonally wet. The section passing under an electricity pylon is culverted after which the banks increase in height to 2-3m and the channel becoming deeper and more open as it approaches North Beck Drain (Photographs 6 and 7). Bankside vegetation is dominated by cock's-foot but includes cow parsley, common reed and great willowherb with hard rush, water figwort and water cress in the channel.

Drain 5

3.3.5 North Beck Drain (Photographs 8 and 9) was surveyed between the B1173 in the south-east, and a point approximately 50m north of the A180. From the B1173, this watercourse meanders eastwards and has an open channel with a water depth of 200-400mm and steep banks 4m high which have slumped in many places. The banks are dominated by cock's-foot with curled dock, common nettle, cleavers and scattered bramble and hawthorn scrub. Aquatic vegetation includes frequent patches of common water starwort, broad-leaved pondweed and fool's water-cress.

3.3.6 Close to Stallingborough the drain turns north and the banks have patches of dense bramble and scattered small trees comprising elder, sycamore, willow and hawthorn, over a ground flora dominated by butterbur and hard rush. It runs under the railway (12) and continues to meander northwards. The banks remain high and steep and covered in lush grassy vegetation with scattered hawthorn and the channel continues open with marginal common reed and hard rush and the same assemblage of aquatic vegetation. When it reaches the A180 it turns west, here running in a concrete channel, and is then culverted below the road (10), beyond which it widens and continues northwards.

Photographs 8 and 9 Views of North Beck Drain

Drain 6

3.3.7 This watercourse also runs north-east from the B1173, parallel and to the south of North Beck Drain, which it joins close to Stallingborough. The channel is approximately 1m wide and densely vegetated with common reed at its western end, becoming more open further east where there is marginal water figwort, meadowsweet and bulrush. The banks are 2-3m in height close to the B1173, rising to 5-6 m as it approaches North Beck Drain. Bank vegetation comprises predominantly cock's-foot with common couch, tufted hair-grass, lesser celandine, common field speedwell, ribwort plantain and creeping buttercup.

3.4 AMPHIBIANS AND REPTILES

3.4.1 No ponds are present within the survey area and even the seasonally wet drains are unlikely to hold water into early summer. The more permanent drains have some potential to support amphibians although most of the terrestrial habitat is poor, comprising mainly arable. The flow of North Beck Drain is probably too fast in most parts to be suitable as aquatic habitat for any amphibians.

3.4.2 No great crested newts or other amphibians or their eggs/spawn were found during the surveys.

3.4.3 No reptiles were seen during the survey although many of the drain banks have the potential to support grass snake. The strip of rough grassland (1) has some potential to support common lizard and slow-worm *Anguis fragilis* but presence of these species is dependent on the length of time for which this strip of habitat has been established and whether there are any nearby populations with sufficient connecting habitat.

3.5 MAMMALS

3.5.1 A number of trees in the survey area have the potential to support roosting bats (Photograph 10). Most of these grow along the banks of Drain 6 (14), but locations of all suitable trees are shown on Figure 1.

3.5.2 Under the pasture immediately west of Stallingborough is a series of small connected tunnels (13) that could be accessed by bats due to an ill fitting cover plate (Photograph 11). Bats may use structures such as this for hibernation in winter. Examination of the brick railway bridge (12) and the concrete road bridge (10) over North Beck Drain showed no crevices or gaps to support roosting bats in either.

Photograph 10 Ash tree with splits

Photograph 11 Gap allowing entrance to tunnels

3.5.3 Figure 1 shows the extent of watercourses used by water voles. All of the wet drains south of the A180 show such signs (Photographs 12 and 13) but North Beck Drain in particular is excellent water vole habitat and signs were plentiful and continuous throughout. A sketch map of signs on North Beck Drain is given in Appendix 3. Given the number of signs seen in March, a time when numbers are low after winter mortality, it can be assumed that by the middle of summer this area has a substantial population of water voles.

Photograph 12 Water vole burrow, North Beck Drain

Photograph 13 Water vole latrine, Drain 2

3.5.4 One active badger sett and a lying up site were found within the survey area and pathways with prints were recorded along several linear features. It has been agreed that actual locations of badger signs are to be treated as confidential.

3.6 BIRDS

3.6.1 Lincolnshire Bird Club records show that two species listed on Schedule 1 of the Wildlife and Countryside Act, hobby *Falco subbuteo* and barn owl, currently breed within 2km of the survey

area. Two further Schedule 1 species have been recorded in the general area in the non-breeding season and it is considered that they may breed here in the future. Sparrowhawks also breed locally and common buzzard and merlin both winter throughout the Outmarsh.

3.6.2 BAP and red list species (Gregory *et al*, 2002) breeding within the two tetrads (2x2km squares) which include the survey area are grey partridge *Perdix perdix*, skylark, song thrush *Turdus philomelos*, willow tit *Poecile montanus*, starling *Sturnus vulgaris*, house sparrow *Passer domesticus*, tree sparrow, linnet *Carduelis cannabina*, bullfinch *Pyrrhula pyrrhula*, yellowhammer and reed bunting *Emberiza schoeniclus*. Wintering birds recorded in the Stallingborough include flocks of golden plover and lapwing, both species which are associated with the Humber Estuary SPA/Ramsar site, but also found more generally on farmland in winter, and also flocks of fieldfare and redwing.

3.6.3 A list of the bird species recorded in the survey area during the March survey visit is included in Appendix 1. A barn owl was seen at dusk, flying over the railway line close to North Beck Drain.

4 ASSESSMENT OF BIODIVERSITY VALUE

4.1 THE SURVEY AREA

4.1.1 All the plant communities present within the survey area are of low conservation concern and can be considered common and widespread both nationally and locally (Rodwell, 1991 and 1992). Drainage dykes and becks are Broad Habitats listed in the Lincolnshire BAP due to their importance in serving as wildlife corridors through large expanses of arable. This is particularly the case where hedgerows are very limited, as in the area surveyed.

4.1.2 None of the hedges anywhere in the entire survey area meet the criteria in the Hedgerow Regulations 1997.

4.1.3 None of the plants recorded are Nationally Rare (Perring and Farrell, 1983) or Nationally Scarce (Stewart *et al*, 1994) and all fall into the category of least concern in the Red Data List of vascular plants (Cheffins and Farrell, 2005). None have either UK or local BAPs (Anon, 1999; Lincolnshire Wildlife Trust, 2006)

4.1.4 Water vole is a Priority Species listed in the National BAP and has a specific Species Action Plan (SAP) within the Lincolnshire BAP aimed at maintaining the nationally important water vole population of Lincolnshire at current levels. The Outmarsh is one of the heartlands for this species and it will be important to ensure that there is no net loss of good water vole habitat.

4.1.5 The study area is likely to support a good range of typical farmland species in both summer and winter, including a number for which there are national and local Biodiversity Action Plans. Some of these are associated with the open field habitat, but many require rough grassland of drain banks and headlands for nesting and to provide invertebrates and weed seeds for food. It will again be important to ensure that there is no net loss of such habitat.

4.2 THE ROUTE OPTIONS

Option 1

4.2.1 The area within the Option 1 envelope includes three drains with substantial water vole populations, an active badger sett (details to remain confidential), a mature hedgerow and mature trees with the potential to support roosting bats. These linear features provide good feeding opportunities for both bats and barn owls, as do the meadows to the west of Stallingborough. The hedges, trees and grassland are all likely to be valuable to a number of BAP and red list bird species. Loss of these features would therefore have the potential to adversely affect these species.

4.2.2 Conversely, providing that the mature trees are retained, there is significant potential to use the flow of water along North Beck Drain to create new wetland habitat within this route envelope.

Option 2

4.2.3 The area within this route envelope comprises almost entirely arable. A small section of North Bank Drain occupied by water voles, close to the A180 roundabout, would be affected but as the drain at this point has already been subject to culverting and reinforcement works any negative impacts to wildlife would be minimal. Only one linear feature would be cut under this Option and this is a seasonally wet drain not used by water voles. Prints found during the survey show that badger and fox use the drain as a pathway and an underpass would therefore be required.

4.2.4 This Option would have the benefit of creating an additional corridor for wildlife through a large expanse of arable via the associated verges and drains of the new carriageway.

Option 3

4.2.5 Option 3 would involve the construction of two new slip roads feeding into the A18 and the widening of the existing carriageway to incorporate additional lanes. On the north side these

works would have minimal impact to habitats and wildlife as the slip road would be routed through arable land and the soke drain on this side is unsuitable for water voles. On the south side it is likely that the strip of rough grassland adjacent to the B1173 would be lost, and in landscapes dominated by arable, such pockets of rough grassland and scrub provide valuable habitat for many species. Drains 1 and 2, both of which have water vole populations, would also be affected.

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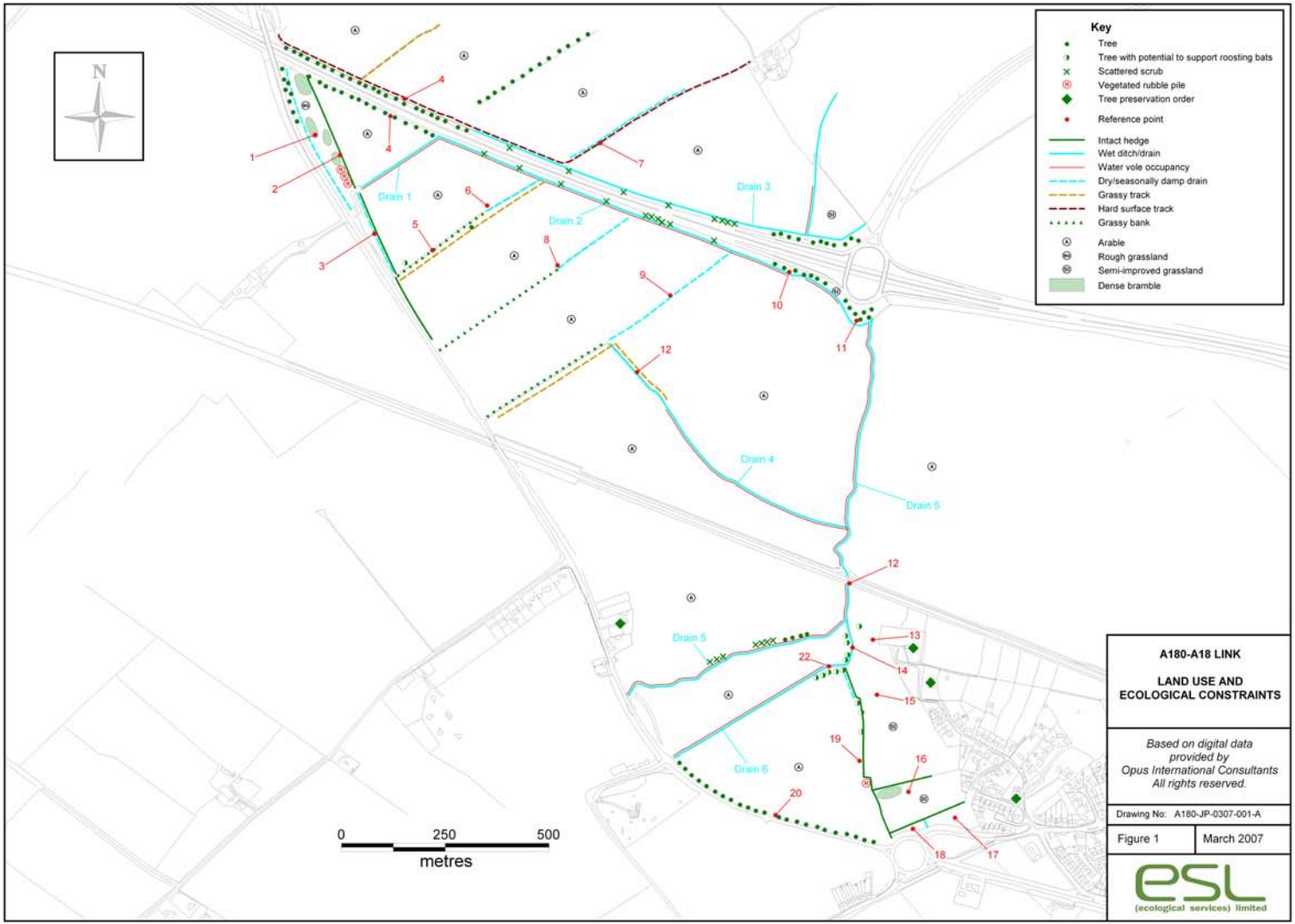
N
Key
Tree
Tree with potential to support roosting bats
Scattered scrub
Vegetated rubble pile
Tree preservation order
Reference point
Intact hedge
Wet ditch/drain
Water vole occupancy
Dry/seasonally damp drain
Grassy track
Hard surface track
Grassy bank
Arable
Rough grassland
Semi-improved grassland
Dense bramble
Drain 1
Drain 2
Drain 3
Drain 4
Drain 5
Drain 5
Drain 6
1
2
3
4
4
5
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250
500
metres
A180-A18 LINK
LAND USE AND ECOLOGICAL CONSTRAINTS
Based on digital data provided by Opus International Consultants
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Drawing No: A180-JP-0307-001-A
Figure 1
March 2007
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APPENDIX 1
A180-A18 Study Area Species List

A180-A18 STUDY AREA SPECIES LIST, MARCH 2007

ENGLISH NAME	SCIENTIFIC NAME	DAFOR
PLANTS		
alder	*Alnus glutinosa*	O
ash	*Fraxinus excelsior*	O
blackthorn	*Prunus spinosa*	O
bramble	*Rubus fruticosus*	F
bristly oxtongue	*Picris echioides*	F
broad-leaved pondweed	*Potamogeton natans*	O
brooklime	*Veronica beccabunga*	O
bulrush	*Typha latifolia*	O
butterbur	*Petasites hybridus*	O
celery-leaved buttercup	*Ranunculus sceleratus*	R
cleavers	*Galium aparine*	F
cock's-foot	*Dactylis glomerata*	A
colt's-foot	*Tussilago farfara*	O
common bent	*Agrostis capillaries*	O
common couch	*Elytrigia repens*	F
common duckweed	*Lemna minor*	O
common field-speedwell	*Veronica persica*	O
common knapweed	*Centaurea nigra*	F
common ragwort	*Senecio jacobaea*	F
common reed	*Phragmites australis*	F
common water-starwort	*Callitriche stagnalis*	F
cow parsley	*Anthriscus sylvestris*	O
creeping bent	*Agrostis stolonifera*	F
creeping buttercup	*Ranunculus repens*	F
creeping thistle	*Cirsium arvense*	F
crested dog's-tail	*Cynosurus cristatus*	F
curled dock	*Rumex crispus*	F
dandelion	*Taraxacum sp*	F
dog-rose	*Rosa canina*	O
dove's-foot crane's-bill	*Geranium molle*	O
elder	*Sambucus nigra*	O
eld maple	*Acer campestre*	O
floating sweet-grass	*Glyceria fluitans*	O
fool's-water-cress	*Apium nodiflorum*	F
great willowherb	*Epilobium hirsutum*	F
ground-ivy	*Glechoma hederacea*	F
guelder-rose	*Viburnum opulus*	O
hairy-brome	*Bromopsis ramose*	O
hard rush	*Juncus inflexus*	F
hawthorn	*Crataegus monogyna*	F
hazel	*Corylus avellana*	O
hemlock	*Conium maculatum*	O
hogweed	*Heracleum sphondylium*	F
holly	*Ilex aquifolium*	O
lesser celandine	*Ranunculus ficaria*	F
meadowsweet	*Filipendula ulmaria*	R
pedunculate oak	*Quercus robur*	O
red clover	*Trifolium pratense*	O
ribwort plantain	*Plantago lanceolata*	F
rosebay willowherb	*Chamerion angustifolium*	O
silver birch	*Betula pendula*	O
smooth sow-thistle	*Sonchus oleraceus*	F
spear thistle	*Cirsium vulgare*	F

ENGLISH NAME	SCIENTIFIC NAME	DAFOR
PLANTS cont….		
sycamore	*Acer pseudoplatanus*	F
timothy	*Phleum pratense*	O
tufted hair-grass	*Deschampsia cespitosa*	F
water figwort	*Scrophularia auriculata*	F
water-cress	*Rorippa nasturtium-aquaticum*	F
water-starwort	*Callitriche* sp	F
white clover	*Trifolium repens*	F
white dead-nettle	*Lamium album*	O
wild teasel	*Dipsacus fullonum*	F
willow	*Salix* sp	O
Yorkshire-fog	*Holcus lanatus*	F

KEY TO DAFOR

(An estimate of relative abundance at a site)

D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

BIRDS

pheasant	*Phasianus colchicus*
common snipe	*Gallinago gallinago*
barn owl	*Tyto alba*
skylark	*Alauda arvensis*
wren	*Troglodytes troglodytes*
robin	*Erithacus rubecula*
magpie	*Pica pica*
tree sparrow	*Passer montanus*
yellowhammer	*Emberiza citrinella*

MAMMALS

mole	*Talpa europaea*
rabbit	*Oryctolagus cuniculus*
water vole	*Arvicola terrestris*
brown rat	*Rattus norvegicus*
fox	*Vulpes vulpes*
badger	*Meles meles*

APPENDIX 2

Protected Species Legal Statements

PROTECTED SPECIES LEGAL STATEMENTS

Given below are summaries of the protection afforded, under current UK legislation, to each statutorily species/group known to be present within the study area. This is for information only; full guidance should always be sought from the relevant statutes.

1 WATER VOLES

1.1 Water voles are given partial protection under the Wildlife and Countryside Act (1981 and as amended) which makes it an offence to intentionally or recklessly damage, destroy, or obstruct access to any structure or place which water voles use for shelter or protection, or to disturb any water vole while it is occupying a structure or place which it uses for that purpose.

1.2 There is no provision in the Act for licensing works which could give rise to an offence, but it does provide a defence where the otherwise unlawful act can be shown to be the incidental result of a lawful operation and could not reasonably have been avoided. Permitted development or a development which has received planning permission is clearly a lawful activity but best practice requires that the minimum of habitat be removed, that good habitat is restored following the necessary works if at all possible, or that equivalent habitat be provided or enhanced elsewhere in mitigation, with the animals moved to this new habitat before destruction of the old.

2 BADGERS

2.1 Badgers are fully protected by the Protection of Badger Act 1992, which subsumed all previous legislation covering this species. This Act makes it an offence *inter alia* to:

- wilfully kill, injure or take, or attempt to kill, injure or take, a badger
- interfere with a badger sett by doing any of the following things, intending to do any of these things or being reckless as to whether one's actions would have any of these consequences:
  - damaging a badger sett or any part of it;
  - destroying a badger sett;
  - obstructing access to, or any entrance of, a badger sett;
  - disturbing a badger when it is occupying a badger sett.

2.2 A badger sett is defined in the Act as any structure or place which displays signs indicating use by a badger. Although a sett may be empty at a certain time, it may be used as part of a regular cycle throughout the year, and may therefore be considered to be in use. Under certain conditions, activities which could otherwise give rise to an offence may be licensed by DEFRA (for agricultural or land drainage purposes) or English Nature (for development

covered by planning permission). A sett which can be shown to have been unused for at least a full year is considered to fall outside the Act.

3 BIRDS

3.1 The Wildlife and Countryside Act (1981 and as amended) protects all wild birds and their nests and eggs. Under this Act it is an offence to:

- kill, injure or take any wild bird
- take, damage or destroy the nest of any wild bird while it is in use or being built
- take or destroy the egg of any wild bird.

3.2 Bird nesting sites are not themselves protected when not in use and the common species are not protected from disturbance whilst occupying their nest-sites. However, certain rare breeding birds, listed on Schedule 1 of the Act (e.g. barn owls), are also protected against disturbance whilst building a nest or on or near a nest containing eggs or young.

APPENDIX 3

Water Vole Survey Record Sheets

River: North Beck Drain (1) Site Name/Code: Stallingborough

Surveyor: JN / RS Date: 22/3/07 Length Surveyed: _____ m

EA Region: _____ Grid Ref: u/s: _____ d/s: _____

Water Depth (Range): 0.2 - 0.4 m Channel Width: 2 m

Bank height L (Range): 3-5M m R (Range): 3-5M m

Current Water Level: spate/raised/normal/low/very low Evidence of recent spate/flooding: Yes/No

Habitat		Bank	L %	R %	Riparian Zone	L %	R %	Marginal Vegetation	L %	R %
Ditch		Earth/clay/silt			Grazed/mown grassland			Tall dicots		
Small drain (<3m)	✓	Gravel/sand			Ungrazed/grassland			Tall monocots		
Large drain (>3m)		Boulders/pebbles			Arable			Tall mixed	50	50
Canal		Earth cliffs			Marsh			Low dicots		
Stream/river (<3m)		Rock cliffs			Reed swamp			Low monocots		
River (>3m)		Poached			Dry woodland			Low mixed	50	50
Marsh		Reinforced			Wet woodland					
Reed swamp					Houses/gardens			BANK PROFILE		
Pond		VEGETATION			Industrial/built-up			Flat <10°		
Sand/gravel pit		Trees/bushes	5%		Heath			Shallow 10-45°		
Lowland lake		Tall grass/herbs	95%		Saltmarsh			Steep >45°	100	100
Upland loch		Short grass/herbs						Vertical		
Reservoir		Bare						Undercut		
								Slumping		

Disturbance/Threats:

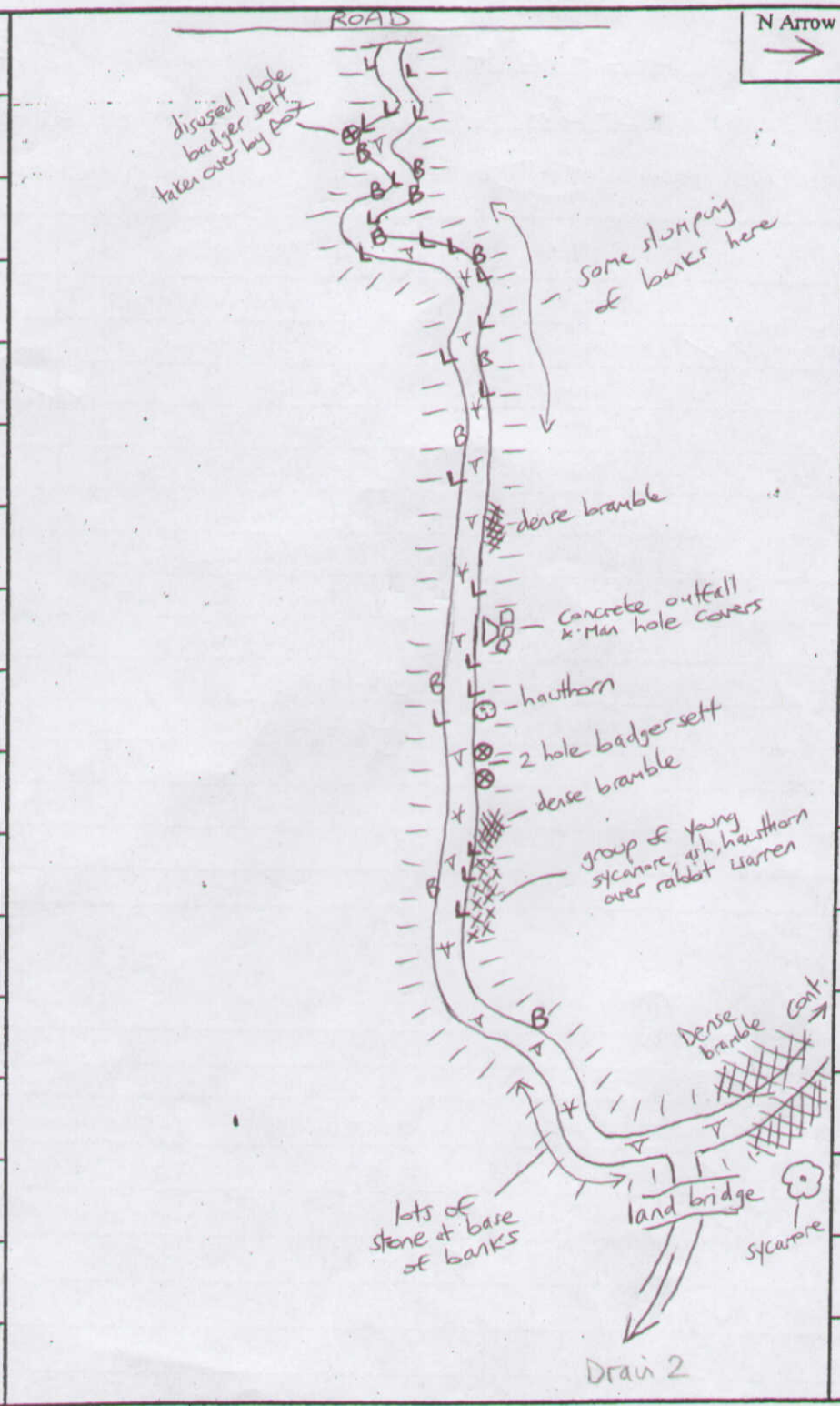
Water vole		Rat		Otter		Mink		Flow	%
Sightings (count)		Sightings (count)		Sightings (count)		Sightings (count)		Static	
Latrines (count)	✓	Droppings	✓	Spraints		Scat		Slow	
Burrows (count)	✓	Footprints		Footprints		Footprints		Medium	✓
Footprints		Runs	✓	Other		Other		Fast	
Pathways	✓								
Feeding remains									
Grazed lawns	✓								

Water vole feeding remains identified

Opportunities to enhance habitat for water voles

WATER VOLE RECORDING FORM

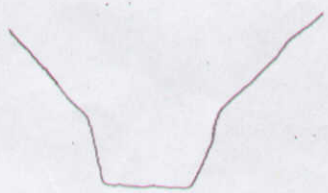
SKETCH OF SITE – Water vole activity indicated (if any)

Mature tree		Roadbridge
Overhanging branches		Footbridge
Fallen trees		Weir
Exposed roots		Outfall △
Pollarded tree		Dredgings
Sapling		Bank walked
Scrub		Tall herbs/grasses
Hedge		Photo location
Fence		Short grass
Emergent monocots		
Emergent dicots ⊽		Water vole burrow B
Aquatic vegetation ⊽		Water vole latrine L
		Water vole pathway
Earth cliffs		badger sett ⊗
Artificial bank		
Floodbank		

ADDITIONAL NOTES:

Some evidence of rat use

X SECTION



Banks almost vertical low down then 45°

River: North Beck Drain (2) Site Name/Code: Stallingborough

Surveyor: JN / RS Date: 22/3/07 Length Surveyed: _____ m

EA Region: _____ Grid Ref: u/s: _____ d/s: _____

Water Depth (Range): 0.2 – 0.4 m Channel Width: 2 m

Bank height L (Range): 3-5M m R (Range): 3-5M m

Current Water Level: spate/raised/normal/low/very low Evidence of recent spate/flooding: Yes/No

Habitat		Bank	L %	R %	Riparian Zone	L %	R %	Marginal Vegetation	L %	R %
Ditch		Earth/clay/silt			Grazed/mown grassland			Tall dicots		
Small drain (<3m)	✓	Gravel/sand			Ungrazed/grassland			Tall monocots		
Large drain (>3m)		Boulders/pebbles			Arable			Tall mixed	50	50
Canal		Earth cliffs			Marsh			Low dicots		
Stream/river (<3m)		Rock cliffs			Reed swamp			Low monocots		
River (>3m)		Poached			Dry woodland			Low mixed	50	50
Marsh		Reinforced			Wet woodland					
Reed swamp					Houses/gardens			BANK PROFILE		
Pond		VEGETATION			Industrial/built-up			Flat <10°		
Sand/gravel pit		Trees/bushes			Heath			Shallow 10-45°		
Lowland lake		Tall grass/herbs	100		Saltmarsh			Steep >45°	100	100
Upland loch		Short grass/herbs						Vertical		
Reservoir		Bare						Undercut		
								Slumping		

Disturbance/Threats:

Water vole		Rat		Otter		Mink		Flow	%
Sightings (count)	1	Sightings (count)		Sightings (count)		Sightings (count)		Static	
Latrines (count)	✓	Droppings		Spraints		Scat		Slow	
Burrows (count)	✓	Footprints		Footprints		Footprints		Medium	99
Footprints	✓	Runs		Other		Other		Fast	1
Pathways	✓								
Feeding remains	✓								
Grazed lawns	✓								

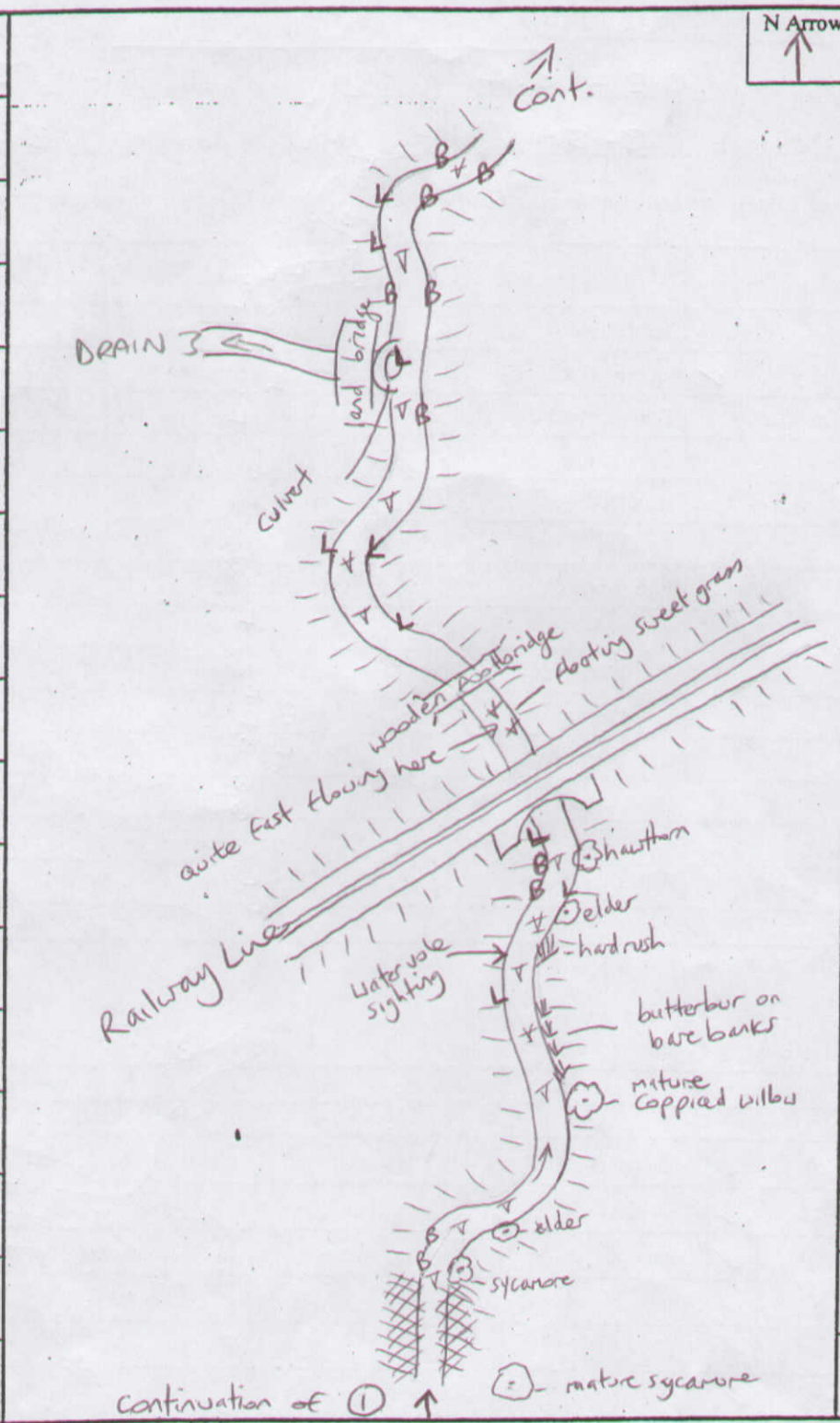
Water vole feeding remains identified

Opportunities to enhance habitat for water voles

WATER VOLE RECORDING FORM

SKETCH OF SITE – Water vole activity indicated (if any)

Mature tree	N Arrow	Roadbridge
Overhanging branches		Footbridge
Fallen trees		Weir
Exposed roots		Outfall
Pollarded tree		Dredgings
Sapling		Bank walked
Scrub		Tall herbs/grasses
Hedge		Photo location
Fence		Short grass
Emergent monocots		
Emergent dicots		Water vole burrow B
Aquatic vegetation		Water vole latrine L
		Water vole pathway
Earth cliffs		
Artificial bank		
Floodbank		



ADDITIONAL NOTES:

Banks covered in long flattened grass that probably covers many WV burrows

X SECTION

River: North Beck Drain (3) Site Name/Code: Stallingborough

Surveyor: JN/RS Date: 22/3/07 Length Surveyed: _____ m

EA Region: _____ Grid Ref: u/s: _____ d/s: _____

Water Depth (Range): 0.2 - 0.5 m Channel Width: 2 m

Bank height L (Range): 3 - 5M m R (Range): 3 - 5 m m

Current Water Level: spate/raised/normal/low/very low Evidence of recent spate/flooding: Yes/No

Habitat		Bank	L %	R %	Riparian Zone	L %	R %	Marginal Vegetation	L %	R %
Ditch		Earth/clay/silt			Grazed/mown grassland			Tall dicots		
Small drain (<3m)	✓	Gravel/sand			Ungrazed/grassland			Tall monocots		
Large drain (>3m)		Boulders/pebbles			Arable			Tall mixed	50	50
Canal		Earth cliffs			Marsh			Low dicots		
Stream/river (<3m)		Rock cliffs			Reed swamp			Low monocots		
River (>3m)		Poached			Dry woodland			Low mixed	50	50
Marsh		Reinforced			Wet woodland					
Reed swamp					Houses/gardens			BANK PROFILE		
Pond		VEGETATION			Industrial/built-up			Flat <10°		
Sand/gravel pit		Trees/bushes	5%		Heath			Shallow 10-45°		
Lowland lake		Tall grass/herbs	95%		Saltmarsh			Steep >45°	100	100
Upland loch		Short grass/herbs						Vertical		
Reservoir		Bare						Undercut		
								Slumping		

Disturbance/Threats:

Water vole		Rat		Otter		Mink		Flow	%
Sightings (count)		Sightings (count)		Sightings (count)		Sightings (count)		Static	
Latrines (count)	/	Droppings	/	Spraints		Scat		Slow	
Burrows (count)	/	Footprints	/	Footprints		Footprints		Medium	
Footprints	/	Runs	/	Other		Other		Fast	
Pathways	/								
Feeding remains	/								
Grazed lawns	/								

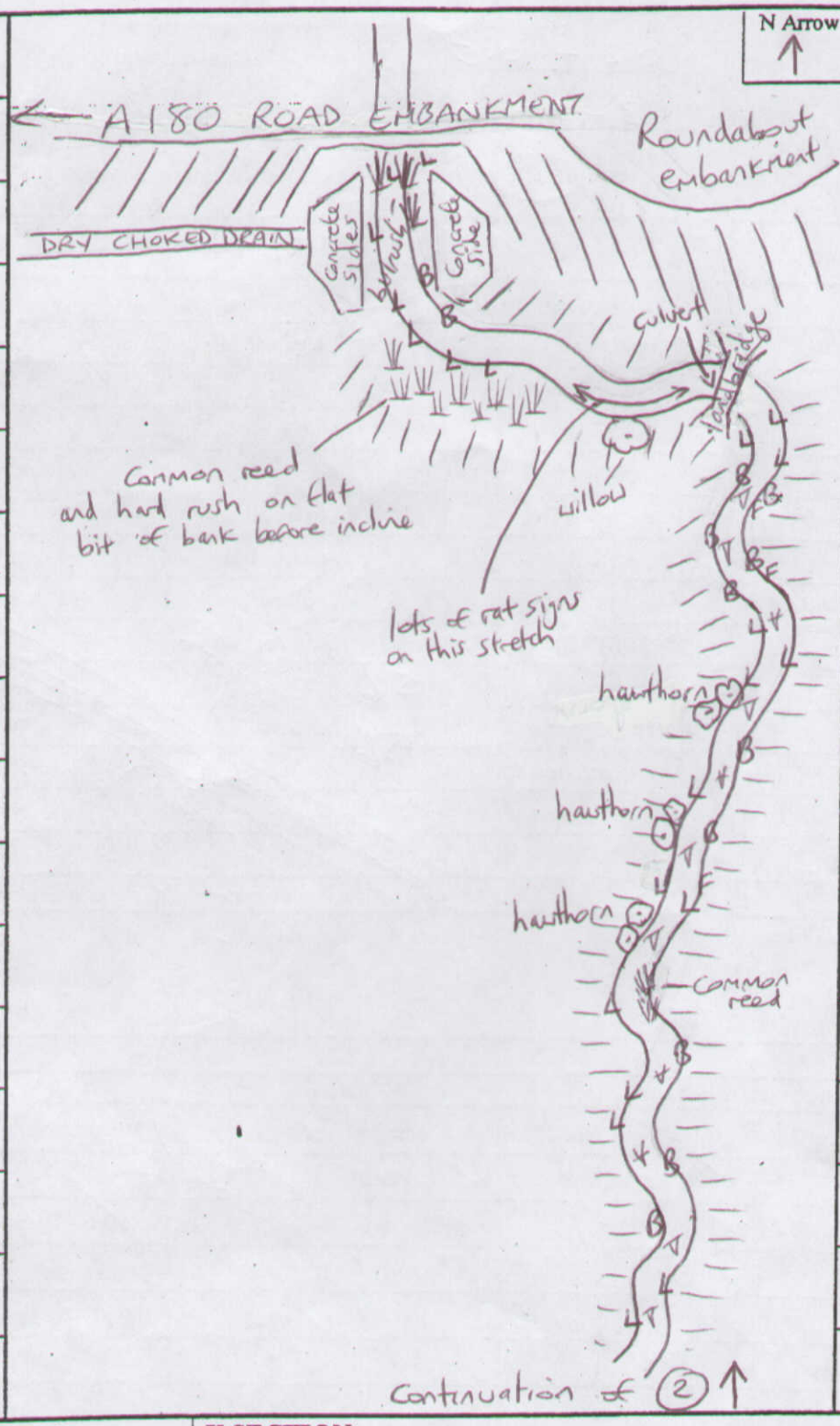
Water vole feeding remains identified

Opportunities to enhance habitat for water voles

WATER VOLE RECORDING FORM

SKETCH OF SITE – Water vole activity indicated (if any)

Mature tree	
Overhanging branches	
Fallen trees	
Exposed roots	
Pollarded tree	
Sapling	
Scrub	
Hedge	
Fence	
Emergent monocots	
Emergent dicots	
Aquatic vegetation	
Earth cliffs	
Artificial bank	
Floodbank	



Roadbridge	
Footbridge	
Weir	
Outfall	
Dredgings	
Bank walked	
Tall herbs/grasses	
Photo location	
Short grass	
Water vole burrow	B
Water vole latrine	L
Water vole pathway	
feeding signs	F

ADDITIONAL NOTES:

X SECTION