



Roxhill (Junction 15) Ltd

Northampton Gateway, Northampton

WATER VOLE AND OTTER SURVEY REPORT

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FPCR Environment and Design Ltd

Registered Office: Lockington Hall, Lockington, Derby DE74 2RH

Company No. 07128076. [T] 01509 672772 [F] 01509 674565 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

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1.0 INTRODUCTION

- 1.1 This has been produced by FPCR Environment & Design Ltd on behalf of Roxhill (Junction 15) Ltd and provides details of water vole *Arvicola amphibious* and otter *Lutra lutra* surveys undertaken during 2014 at land to the west of junction 15 of the M1, Northamptonshire (referred to herein as 'the site').
- 1.2 The report has been produced to accompany an Environmental Statement of the development proposals and should be read in conjunction with that document.

Site location and context

- 1.3 The site covers a total of 77ha and is bound to the north by Collingtree Road, to the east by the M1, to the south by the A508 / Northampton Road and to the west by arable fields. The site itself comprises arable fields bisected by hedgerows of varying ages and structures, with areas of woodland, tree belts, grassland, ponds, wet ditches and several abandoned buildings (central grid reference SP 748 547). The surrounding landscape consists of arable farmland with woodland blocks, pasture and scattered urban areas. Full details and description of the on-site habitats can be found in the Ecology Chapter 5: Appendix 5.1.

Development Proposals

- 1.4 The proposals for development of this site comprises:
- An intermodal freight terminal including container storage and HGV parking, rail sidings to serve individual warehouses, and the provision of an aggregates facility as part of the intermodal freight terminal, with the capability to also provide a 'rapid rail freight' facility;
 - Up to 468,000 sq m (approximately 5 million sq ft) (gross internal area) of warehousing and ancillary buildings, with additional floorspace provided in the form of mezzanines;
 - A secure, dedicated, HGV parking area of approximately 120 spaces including driver welfare facilities to meet the needs of HGVs visiting the site or intermodal terminal;
 - New road infrastructure and works to the existing road network, including the provision of a new access and associated works to the A508, a new bypass to the village of Roade, improvements to Junction 15 and to J15A of the M1 motorway, the A45, other highway improvements at junctions on the local highway network and related traffic management measures;
 - Strategic landscaping and tree planting, including diverted public rights of way;
 - Earthworks and demolition of existing structures on the SRFI site.
- 1.5 This report details the results of otter and water vole surveys first carried out in 2014 and again, subsequently, on the 19th September 2016 and 1st August 2017. The results of presence/absence surveys are presented and appropriate mitigation measures recommended to ensure that the local conservation status of these species is maintained following development.

2.0 LEGISLATION AND POLICY

Water Vole

- 2.1 Water voles are fully protected under section 9 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:-
- Intentionally kill, injure or take water voles;
 - Intentionally possess or control live or dead water voles or derivatives;
 - Intentionally or recklessly damage, destroy and obstruct access to any structure or place used by water voles for shelter or protection; and/or
 - Intentionally or recklessly disturb water voles whilst they are using such a place.
- 2.2 Water voles are listed as a Species of Principal Importance in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The Northamptonshire Biodiversity Partnership has produced a species action plan for water vole¹, which incorporates a number of key actions including mink *Mustela vison* control, creation of habitat corridors, riparian buffer strips and promotion of sympathetic ditch management. The majority of the stated actions are for the Swanspool Stream in Wellingborough and the Barnwell Stream which support good water vole populations.

Otter

- 2.3 Otter are fully protected under Schedule 5 of the Wildlife & Countryside Act 1981 (*as amended*) due to the protection afforded to their places of shelter and protection. They are afforded protection under Section 9 parts 4(a) and 4(b). This makes it an offence to:
- Intentionally or recklessly kill, injure or take these species
 - Possess or control live or dead species or derivatives
 - Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
 - Intentionally or recklessly disturb these species whilst occupying a structure or place used for that purpose
 - Sell these species or offer or expose for sale or transport for sale
 - Publish or cause to be published any advertisement which conveys the buying or selling of these species
- 2.4 The otter is also protected by the Habitats and Species Regulations 2017. In effect this legal protection makes it an offence to deliberately:
- Kill, take or injure an otter
 - Damage or destroy an otters place of shelter
 - Disturb an otter whilst using such a place

The European otter is listed as a Species of Principal Importance in England under Section 41 of the NERC Act 2006. Otter is also identified as a Priority Species of the Northamptonshire Biodiversity Partnership Action Plan, which aims to improve road bridges to allow otters to pass

¹ Northamptonshire Biodiversity Action Plan 2007/08 – www.northamptonshirebiodiversity.org/default.asp_PageID=2&n=Home.html

safely underneath, promote a fish population increase through increased water quality and promote management of watercourses and adjacent habitats to include wet woodland.

Any operations that may lead to either a direct or indirect effect upon otter or their places of rest or shelter require a Natural England European Protected Species (EPS) license. EPS licenses involve the production of a method statement detailing appropriate mitigation and compensation to ensure that the favourable conservation status of otter is not affected during the proposed operations.

3.0 METHODOLOGY

Desktop Study

- 3.1 In order to compile existing baseline information, relevant ecological information was requested from the Northamptonshire Biodiversity Records Centre (NBRC).

Field Survey

- 3.2 The survey effort focused on the entire length of the watercourse RW1. The length surveyed was approximately 800m from the western extent of the site (OS Grid Ref: SP 746 536) downstream to the eastern most extent of the survey site, where the stream flows under the A508 via a narrow pipe culvert (OS Grid Ref: SP 753 540). In addition to the watercourse, a section of wet ditch (D1) located on arable land adjacent to Junction 15 of the M1 was surveyed. The length of the ditch surveyed was approximately 385m and extends from a western point (SP 755 545) where the ditch crosses under the A508, to an eastern point (SP 758 544) where the ditch crosses north under the M1.
- 3.3 The only suitable habitat associated with the Highway Mitigation measures was watercourse RW2 at the south-eastern extent of the Road Bypass (Appendix 5.1: Figure 2b).

Water Vole

- 3.4 The survey followed the standard methodology outlined within Strachen *et al* (2011)² and involved searching the banks/margins of the watercourse and wet ditch for evidence of water vole. Field signs searched for included:
- Latrine sites – distinct piles of water vole droppings found near nest sites, at the ranges of territorial boundaries and where the animals enter and leave the water;
 - Feeding stations – areas with distinct neat piles of chewed lengths of vegetation along pathways or haul out platforms along the water's edge;
 - Burrows – burrow entrances are typically wider than high with a diameter between 4-8cm. Generally these burrow entrances are located at the water's edge;
 - Lawns – short grazed areas at the entrances to burrows;
 - Prints – identifiable prints in soft margins of the watercourse;

² Strachen, R, Moorhouse, T and Gelling, M (2011) Water Vole Conservation Handbook. Third edition

- Runways – low tunnels that are pushed through the vegetation and often leading to burrows or feeding stations.
- 3.5 Descriptions of the watercourse and ditch were also made to aid any enhancement or mitigation recommendations required.

Otter

- 3.6 Survey methodology attempted to determine the status of otters. The methodology followed that of the full survey detailed in the New Rivers and Wildlife Handbook³. Consideration was given to their potential presence within the entire site during the phase 1 survey although the majority of survey effort focused on the water courses RW1 and ditch D1 in the Main site (Appendix 5.1: Figure 2a) and RW2 at the south-eastern extent of the Roade Bypass (Appendix 5.1: Figure 2b).
- 3.7 Due to the unlikely event of actual observation, the survey concentrated on locating field signs indicating otter presence or use. Such field signs include:
- Spraints – characteristic sweet-smelling, black tar-like (where fresh/relatively recent i.e. within a few weeks) or grey crumbly (when old) faecal deposits usually containing fish scales, bones and occasionally invertebrate exoskeleton and bird feathers.
 - Footprints – In good substrate typically asymmetrical and showing five toes arched around a large pad and, depending on substrate, webbing and claw marks. Poorer, generally coarser substrates do not often enable the identification of otter footprints.
- 3.8 Additional signs of otter presence may occur, although without additional evidence are usually not conclusive proof of current otter presence:
- Feeding remains – Remains of fish and aquatic invertebrates
 - Slides/haul-outs – Routes into and out of the water, which are usually associated with terrestrial routes such as short cuts around meanders or along traditionally, used otter paths/routes.
 - Couches/hovers – above ground resting place. Usually associated with cover such as dense scrub, rushes or reed, flood debris or fallen trees. Many couches are rarely used whilst other more so. Difficult to prove use without radio tracking.
 - Holts – below ground resting site usually associated with sprainting. Sometimes used with greater frequency than couches and can be important for breeding (natal holts) where other signs are usually absent. Notoriously difficult to find or prove without radio tracking.

4.0 RESULTS

Desktop Study

- 4.1 The NBRC provided two historic water vole records dating from 1997 and 1984. The more recent record is located 2km west of the site along the Grand Union Canal whilst the older record originates from Blisworth approximately 2km south west of the site. Two otter records are present

³ RSPB, the National Rivers Authority, and the RSNV 1994

from Shelfleys Lake approximately 2.4km north-west of the site, both of which are historical records dating from 1995.

Field Survey

Habitat Assessment

Stream RW1

- 4.2 RW1 flows through the south of the Main Site. At the time of survey the depth of water within the watercourse was approximately 0.1-0.2m and supported a slow to medium flow along the majority of the length surveyed. Although typically 1m wide, the channel narrows centrally within the section surveyed. The channel bed was firm comprising clay with occasional silt deposits.
- 4.3 Banks were generally graded at 45° and were approximately 2m in height. A degree of management work including the removal of silt from the channel along with vegetation from the foot of the banks had taken place during the winter period of 2013/14. These works have resulted in localised patches of bare earth (Photograph 1).
- 4.4 A managed hedgerow is situated along the southern bank of the stream for the full extent of the section surveyed. This has resulted in patchy vegetation growth with frequent earth banks and exposed roots. The margins of northern bank of the stream were however generally well-vegetated comprising abundant great willowherb *Epilobium hirsutum*, common nettle *Urtica dioica* and bramble *Rubus fruticosus*. Occasional species included broad-leaved willowherb *Epilobium montanum*, hedge woundwort *Stachys sylvatica*, hard rush *Juncus inflexus* and soft rush *Juncus effusus*. The occurrence of grasses became more frequent higher up the banks and included dominant false-oat grass *Arrhenatherum elatius* with occasional to frequent common couch *Elymus repens*, timothy *Phleum pratense* and cocksfoot *Dactylis glomerata*. Bramble often overhung the stream which along with the adjacent hedgerow cast significant shade (Photograph 2). As a consequence, the presence of aquatic vegetation was localised to small patches of watercress *Rorippa nasturtium-aquaticum*, lesser water parsnip *Berula erecta* and floating sweet grass *Glyceria fluitans*.



Photograph 1: Typical section of the stream where recent management had compacted the soils at the toe of the northern bank.



Photograph 2: Encroaching bramble provides significant shading and limits establishment of aquatic and marginal vegetation.

- 4.5 Despite being subject to significant over-shading from the adjacent hedge and encroaching bramble scrub which limits the cover of emergent and marginal vegetation, the stream situated along the southern boundary to the site supports habitat qualities which make it suitable to support a population of water vole. Such features include localised patches of marginal vegetation, permanent deep water and steep banks suitable for burrowing.

Ditch (D1)

- 4.6 From the western most point surveyed the ditch was initially dry for approximately 65m up to a point where water entered via a culvert from north of the M1. The depth of water rarely exceeded 0.05m at the time of the survey although a small number of slightly deeper pools up to 0.2m were present. The ditch supported a very slight flow to the east where initially the ditch supported stands of aquatic and marginal vegetation although was often dominated by great willowherb (Photograph 3). Associated species included frequent to occasional reedmace *Typha latifolia*, hard rush, soft rush, water figwort *Scrophularia auriculata*, watercress and duckweed *Lemna sp.* This section was largely open although occasional goat willow and grey willow provided some localised shade.
- 4.7 Flowing further east the density of willow scrub increased prior to the ditch entering a small area of broad-leaved woodland. As a consequence of increased shading, the ditch at this location was dominated by earth banks (Photograph 4) with marginal vegetation becoming much more localised and limited to rare to occasional wild angelica *Angelica sylvestris*, water mint *Mentha aquatica* and water figwort.
- 4.8 The channel was approximately 1m wide along the section surveyed with banks approximately 2m high and averaging 45° in gradient. The presence of three-spined stickleback *Gasterosteus aculeatus* would suggest the ditch at this location rarely dries.



Photograph 3: Wet ditch supporting dense patches of aquatic and marginal vegetation.



Photograph 4: Typical ditch section which flows east through a small area of broad-leaved woodland.

Stream RW2

- 4.9 A small stream (RW2) flowed adjacent to the proposed Road bypass in the south-east and represents a tributary of the River Tove.
- 4.10 The stream was culverted under farm tracks, the dismantled railway and where it passed under the A508. The depth of water within the watercourse was approximately 5-20cm and supported a slow flow. The channel bed was firm, comprising stone and shingle with silt deposits. The banks to 0.5m high and margins were well vegetated with frequent over shading scrub and common nettle, hogweed *Heracleum sphondylium*, dog's-mercury *Mercurialis perennis* and great horsetail *Equisetum telmateia*.

Field Signs

- 4.11 Evidence that otter is present locally was observed in association with RW1 at a point where it is culverted beneath the A508. No further signs were observed, which is consistent with the occasional use of this watercourse by otter, which is not unexpected given the extensive range often seen in the UK by this species. The majority of the remaining habitats within the Main Site are open and exposed and therefore provide sub-optimal habitat for otter. No evidence of any places of rest or shelter were noted in association with either the watercourse or other habitats within the site that may provide more cover. RW 1 was considered to represent a potentially suitable commuting route for otter between areas of suitable habitat in the surrounding landscape only.
- 4.12 No evidence to confirm the presence of water vole was noted at the time of the survey.
- 4.13 Evidence of brown rat *Rattus norvegicus* was recorded in the form of prints located at the western extent of the stream forming the southern site boundary.

5.0 DISCUSSION

- 5.1 The absence of local recent records and field signs indicates that the site is of negligible interest for water vole.
- 5.2 Limited evidence of otter was recorded along the watercourse RW1 and given the absence of local records the site was considered to be of negligible interest for otter. The majority of the intensively managed arable habitat within the site was open and exposed provided little opportunity for rest or shelter. RW 1 was considered to represent a potentially suitable commuting route for otter between areas of suitable habitat in the surrounding landscape, however, this was limited by a pipe culvert under the A508, which is likely to prevent passage by otters unless water levels are low.
- 5.3 The development of the site does offer some significant opportunity for otters, particularly in providing wetland areas of cover in association with drainage facilities. While detailed design of these has not been undertaken, where possible these should provide areas of open water and cover that may provide additional foraging habitat for otter.