

**New England Resource Recovery Centre  
Nr. Lee Mill, Devon**

**Technical Appendix 12-6 – Otter Survey Results**



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**CONTENTS**

**1.0 INTRODUCTION..... 1**  
    **1.1 Legislative Background..... 1**  
    **1.2 Study Aims and Objectives ..... 2**  
    **1.3 Study Area ..... 2**  
**2.0 METHODOLOGY..... 3**  
    **2.1 Survey Personnel ..... 3**  
    **2.2 Survey Limitations ..... 4**  
**3.0 RESULTS ..... 5**  
    **3.1 Data Search..... 5**  
    **3.2 Habitat Description ..... 5**  
    **3.3 Description of Holts and Day Rests..... 5**  
    **3.4 Field Signs ..... 6**  
**4.0 DISCUSSION AND EVALUATION..... 7**  
    **4.1 Results Discussion ..... 7**  
    **4.2 Evaluation ..... 7**  
**5.0 SUMMARY AND CONCLUSIONS ..... 8**  
**6.0 CLOSURE..... 9**

**TABLES**

**Table 1 – Holt Descriptions ..... 6**

**DRAWINGS**

**Drawing 1 Otter Holt Location Plan**

## 1.0 INTRODUCTION

Viridor commissioned SLR Consulting Ltd (SLR) to undertake an otter survey to support the planning application for the creation of a Resource Recovery Centre at New England Quarry near Lee Mill in Devon.

The proposal for the development of the site includes the construction of a new access road, connecting the site to the A38 1.2km north of the site. The new road will extend from the north eastern corner of the former quarry site, through an area of scrub and wet woodland (Southwood Woods) where it will cross the River Yealm and pass through an area of semi-mature woodland (Challonsleigh Plantation) in a northerly direction alongside the river, continuing through a pasture until it meets the A38 to the north. No existing road or bridge crossing is in place and this infrastructure will need to be constructed as part of the development proposals.

### 1.1 Legislative Background

Otters listed as a European Protected Species (EPS) on the Conservation (Habitats &c.) Directive 1992 and therefore protected in the UK under regulation 39 of the Habitats Regulations 1994 (as amended 2007 and 2009). These regulations make it an offence to:

- (a) deliberately capture, injure or kill any wild animal of an EPS;
- (b) deliberately disturb wild animals of any such species

For the purposes of paragraph (1)(b), disturbance of animals includes in particular any disturbance which is likely—

(a) to impair their ability—

- (i) to survive, to breed or reproduce, or to rear or nurture their young; or
- (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

(b) to affect significantly the local distribution or abundance of the species to which they belong.

(c) deliberately take or destroy the eggs of such an animal; or

(d) damage or destroy a breeding site or resting place of such an animal.

Whilst not tested by law, it has been advised that a deliberate act includes those acts that could have reasonably foreseen the consequences and 'being sufficiently informed' that an offence may occur as a result. The offence of damage or destruction of a breeding site or resting place is a strict liability offence. Anyone who commits this offence, even by accident, will now be open to prosecution.

Otter is also listed under the UK Biodiversity Action Plan which means that local planning authority should consider this species whilst exercising its duties, e.g. the determination of planning applications.

## **1.2 Study Aims and Objectives**

This report collates the findings of a desk study and survey data in order to assess the potential impacts on otters from the proposed development. The report draws upon all the available information to assess the potential impacts of the proposed development and provides an outline of suitable mitigation measures and enhancement measures to avoid any adverse effects.

The objectives of the study were to:

- document the otter interest of the application site through consultation and survey and to identify any areas of particular significance for otters;
- evaluate the otter interest of the application site in the local, regional and national context;
- recommend further survey requirements, if necessary; and
- recommend sensitive design principles and outline mitigation and enhancement measures to minimise the identified impacts.

The results of the study are presented within this report.

## **1.3 Study Area**

Both banks of the River Yealm from 50m below Popples Bridge south of the site to the A38 flyover to the north of the site were inspected for the presence of otter covering a total of 1.5km of river channel.

## **2.0 METHODOLOGY**

### **2.1 Methods**

A detailed otter (*Lutra lutra*) survey was undertaken across the study area on 23<sup>rd</sup> April 2008 and 17<sup>th</sup> April 2009. The surveys involved searching along the water course for signs of otter activity. In addition, suitable habitats within the vicinity of the River Yealm were also searched for evidence of otters.

Survey methodology was informed by similar techniques used for water vole survey<sup>1</sup> and English Nature's advice sheet Monitoring the Otter, Conserving Natura 2000 Rivers Monitoring Series No. 10<sup>2</sup>. Principal field signs for otter are:

- Holts - underground shelters, often found under tree roots, in rock piles, earth banks, and can be located within existing structures such as badger setts, rabbit burrows, fox earths. Above ground shelters in dense scrubby vegetation.
- Couches - lying up places above ground. Often found in long grasses or rushes near watercourses or in wetland areas.
- Feeding sites - where food remains are found, mainly fish or amphibians.
- Spraints - faeces left by the otter, showing food remains. Typical places are on rocks or tree roots in or next to a watercourse, beneath bridges, at crossing points of fences or walls, or on raised ground close to the water. If located, spraints are counted and placed in one of three categories: old, recent or fresh. This provides some indication of the level and most recent occurrence of activity.
- Tracks - otter tracks are highly distinctive and diagnostic and clearly differentiated from mink tracks by both size and shape.

Both banks of the River Yealm from 50m below the bridge near the site entrance, to the A38 flyover were waded and inspected for field signs of otter as listed above.

The position and type of field sign and potential holt or day rest sites were recorded on a plan and notes taken to the types of structure. The length of river was surveyed twice, once in April 2008 and during the following spring in April 2009; this is considered to provide sufficient information on the use of this stretch of river by otter for the purposes of this assessment.

### **2.2 Survey Personnel**

The survey in 2008 was undertaken by Jon Taylor, Laura Moody and Niall Lusby, with the 2009 repeat survey under taken by Jon Taylor and Niall Lusby, all of SLR Consulting Ltd. Jon Taylor CEnv MIEEM is an experienced ecologist with over six years experience in carrying out ecological survey for protected species including otter.

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<sup>1</sup> Strachan, R. & Moorhouse, T.(2006) Water vole conservation handbook (2nd ed.). Wildlife Conservation Research Unit, Oxford, 132pp. ISBN 0 9546376 4 X

<sup>2</sup> Chanin, P. (2003) Monitoring the Otter, Conserving Natura 2000 Rivers Monitoring Series No. 10. ISBN 1 85716 724 4

### **2.3 Survey Limitations**

During both surveys conditions were suitable for otter survey with no periods of heavy rain in the preceding weeks that can reduce the signs of otter presence and the water levels were sufficiently low to allow full access to both banks on both sides of the stretches of the river surveyed. The level of detail recorded during the survey is considered as being sufficient for the purposes of the survey.

### 3.0 RESULTS

#### 3.1 Data Search

A data search commissioned from Devon Biodiversity Records Centre (DBRC) returned only a single record for otter located at the A38 flyover to the north of the site. Further telephone consultation with DBRC was undertaken in 2009, and while no further records were returned for the 2km search area, DBRC does hold records of otter across the wider area, indicating that this species is widely distributed in the locality and recent surveys by Devon Otter Group have confirmed that otter is present in all of the county's major rivers<sup>3</sup>.

#### 3.2 Habitat Description

New England Quarry is a mothballed quarry site with a single large lake formed in the quarry void. Structurally the quarry site open and bare, and considered to be sub-optimal for otter which tends to move within or close to well vegetated areas. However, a large toad population was noted during the May 2009 nocturnal bat survey and other breeding amphibians (frog and palmate newt) have also been reported<sup>4</sup> which could provide a potential food source for the local otter population during spring months. Areas of woodland and scrub surrounding the quarry void are raised above the floodplain of the River Yealm and may provide a refuge while the river is in spate.

The site is bounded to the east by the River Yealm and the proposed access road will cross the river and then run alongside it following its course to the north where it meets the A38. The length of bank side habitat to be affected by the proposed bridge crossing is wooded with natural banks and river features such as point bars, sand banks, riffles, pools, and scattered boulders. Brown trout (*Salmo trutta subsp. fario*) and salmon par (*Salmo salar*) were recorded during the survey indicating its value as a foraging resource. Environment Agency records obtained from the NBN Gateway<sup>5</sup> also report Atlantic salmon, bullhead (*Cottus gobio*), European eel (*Anquilla anquilla*), minnow (*Phonxinus phonxinus*), sea trout (*Salmo trutta subsp. trutta*), three-spined stickleback (*Gasterosteus aculeatus*) and lamprey spp. (*Lampetra*) confirming the river's value as a foraging resource for otter.

#### 3.3 Description of Holts and Day Rests

Holts are enclosed structures either created naturally through fluvial processes such as erosion and collapse of banks / trees or through use of the burrows of other mammal species such as badger or rabbit, day rests are typically more open in nature often in dense reed or other long vegetation and would not be suitable for raising young. Only structures showing confirmed field evidence of otter were recorded as holts, other structures which appeared suitable but did not support any evidence were numerous, but were not recorded during the survey. Unless stated in the table below all structures were in use over both years.

The locations of all holts are shown on Plan 1.

Reference Number	Description	Evaluation of use
1	Rock fall forming covered ledge –fish scales found	Night use - Lying up and feeding

<sup>3</sup> <http://www.devonwildlifetrust.org/index.php?section=people:otter>

<sup>4</sup> Acorn Ecology (2005) *New England Quarry: Quarry Site Biodiversity Audit*. Acorn Ecology, Exeter.

<sup>5</sup> [www.data.nbn.org.uk](http://www.data.nbn.org.uk)

Reference Number	Description	Evaluation of use
	inside. Two spraints and anal jelly on opposite bank.	
2	Rock fall forming covered cavity. Anal jelly and fish scales at entrance in 2009 survey.	Night use - Lying up and feeding
3	Exposed root system of old lime tree, slide leading form cavity formed by roots, smoothed ground and roots, potential prints on opposite bank. Limited access and no visible spraints.	Potential day holt
4	Covered ledge above drainage pipe, old spraint present and fresh scratch marks in mud	Night use - Lying up and feeding
5	Undercut root system with feeding remains and anal jelly inside	Night use - Lying up and feeding
6	Ledge at waters edge below exposed tree root system, spraint inside and slide opposite in 2009 survey.	Night use - Lying up and feeding
7	Cavity behind eroded root system (young sycamore) remains of anal jelly outside, cavity goes up and back – very dark.	Potential day holt
8	Cavity under overhanging ledge with fresh spraint in side. Under sycamore	Potential day holt
9	Cavity behind exposed roots of ash tree, old and fresh spraints and fresh anal jelly on back ledge.	Potential day holt
10	Cavity behind tree root system, two chambers approximately five spraints	Potential day holt
11	Cavity behind the root system of old sycamore 3m deep by 1m wide and 0.5m high. Several spraints up to five inside and out	Potential day holt
12	Cavity beneath ash tree roots, several spraints in 2008 but none in 2009	Potential day holt

**Table 1 – Holt Descriptions and Evaluations**

No couches were recorded within vegetation on either site of the river, however these features are difficult to detect and confidently identify.

### 3.4 Field Signs

Spraints and feeding remains were found along the entire length of river surveyed, although there was a concentration in the southern parts of the study area. The riparian woodland habitats in these areas provide excellent cover for otter and numerous features that could be used by otters as sprainting sites or to lie-up occur along the whole length of the river surveyed. The majority of the field signs were spraints though a few feeding remains were also recorded but a much lesser extent.

## **4.0 DISCUSSION AND EVALUATION**

### **4.1 Results Discussion**

A total of 12 otter holt structures were observed during field surveys in 2008 and 2009, confirming the presence of otter within the study area. Six of the holt structures identified were suitably secluded to be used as day rests with the remaining six being classified as probable night rests.

The river within the study area is considered to provide high quality foraging and shelter habitat for otters; offering abundant unexploited cavities that may also be suitable for use as holt sites. The diverse fish species present in the river and the likely presence of amphibians breeding in the local area add value to the habitat.

The regular occurrence of field signs, e.g. spraints, feeding remains and anal jelly, during both surveys indicates that the study area is regularly used by otters. From the number and freshness of spraints found it is determined that the site provides a key section of territory for at least one breeding female and dependant young. Although the boundaries of the territory have not been determined by the current survey, this territory is likely to extend significantly to the north and south of the study area given the typical territory size of a female otter (see below). Male territories are typically larger and overlap those of the females; it is therefore possible that this stretch may also support a smaller proportion of a male otter's territory.

The River Yealm, which follows a semi-natural riparian corridor of pasture and woodland from Dartmoor to the coast, is likely to support otters along its length. The water quality of the River Yealm is excellent and it is known to support an abundance and wide diversity of fish species; these features combined with a low level of channel modification make it more than capable of supporting breeding otter.

Otters in UK rivers are typically solitary with the home range varying between the sexes. Depending on social status and habitat quality, studies have shown that male otters have an approximate linear range of 40km with female ranges of approximately 16-22km.<sup>6</sup> The survey recorded abundant signs of otter and multiple potential holt sites, with a total of 11 in active or recent use each year over an approximately 1.5km stretch of river. On the basis of the survey data and the reported home ranges typical of individual otters, it is considered likely that the study area provides between 7-9% of the territory used by a single female otter. The stretch of river may also represent a much smaller proportion of a male otter's territory; the male otter's territory may cover the whole river.

### **4.2 Evaluation**

Otter are known to be present throughout Devon despite the low number of records returned by DBRC. The south-west region is reportedly a stronghold for otter within lowland UK and, following a population recovery since the 1980's, otters are found on all Devon's watercourses<sup>7</sup>. A single breeding female is likely to represent <1% of the total breeding otter population within the county and therefore is not significant at a county level. The population of otters in the section of the River Yealm surveyed is therefore considered to be of District importance.

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<sup>6</sup> Mammals of The British Isles: Handbook, 4<sup>th</sup> Edition. Harris, S. & Yalden D.W. The Mammal Society 2008

<sup>7</sup> <http://www.devon.gov.uk/dbap-mammals-otter.pdf>

## **5.0 SUMMARY AND CONCLUSIONS**

A total of six day rests and six night rest holt structures were found during otter surveys undertaken along a 1.5km length of the River Yealm in 2008 and 2009. In addition to structures with confirmed otter use, there are many other structures with potential to be used as holts along the stretch of river surveyed. The woodland and scrub in higher areas may provide refuges while the river is in flood and a toad population breeding in the quarry void may provide a food source during the spring season, however no evidence of this was confirmed during the survey. The river corridor and wider study area also provide suitable shelter and foraging habitat for otters; including unmodified banks and supporting fish and amphibian populations. The River Yealm within the study area is considered to represent high quality otter habitat.

On the basis of the reported habitat requirements of otters and assuming similar habitat quality to the north and south, it is considered that the study area provides a significant part of the territory of a single breeding female, i.e. up to 9% of the female's territory. The study area is also likely to form a smaller part of a male territory.

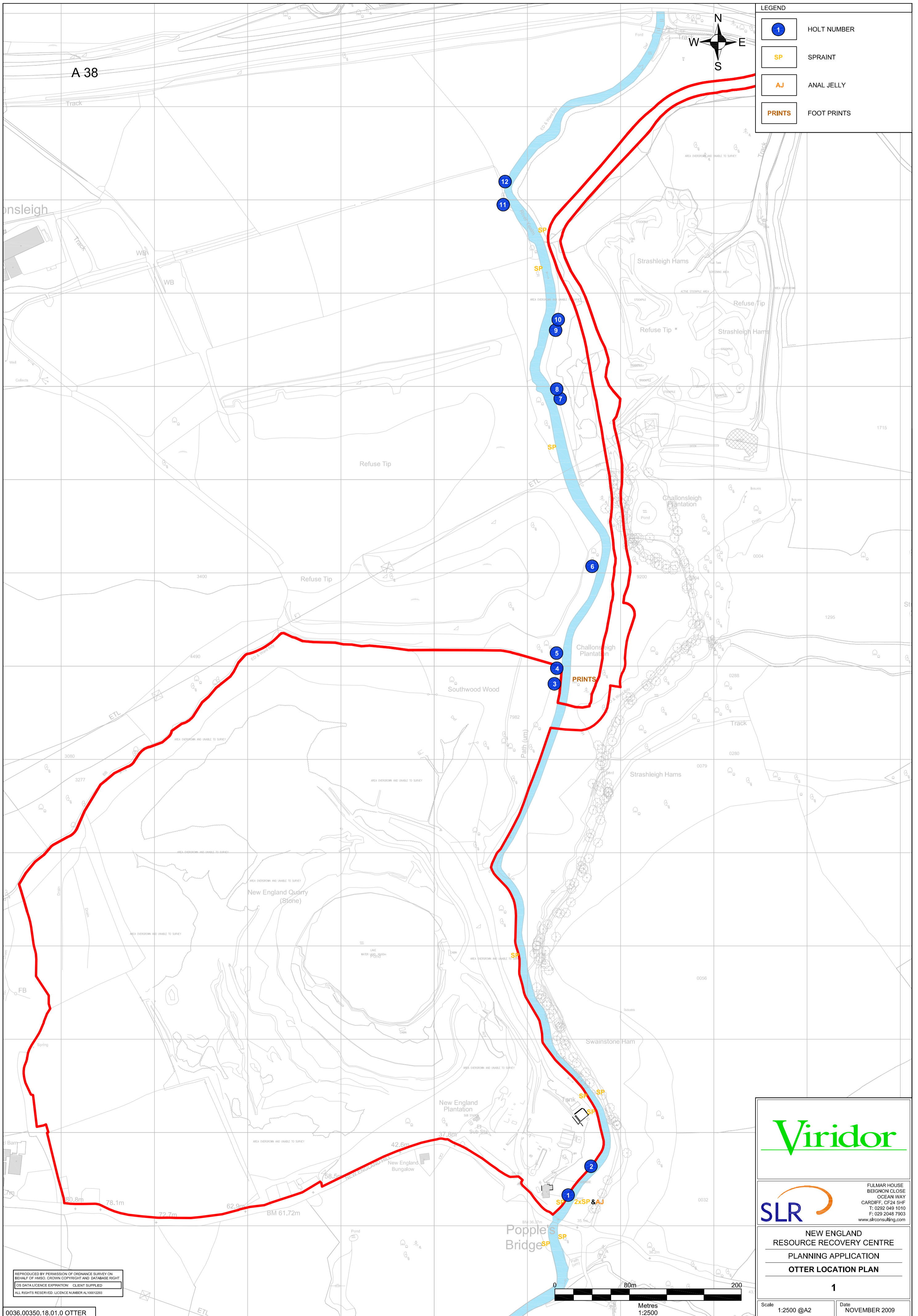
Maintaining the quality, extent and connectivity of the riparian habitat adjacent to the application site is likely to be critical to maintenance of the territory of the breeding female present, but of significantly less significance to a male otter.

## **6.0 CLOSURE**

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Viridor Waste Management Ltd; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.



LEGEND	
	HOLT NUMBER
	SPRAINT
	ANAL JELLY
	FOOT PRINTS

**Viridor**

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