PROTECTED SPECIES SURVEY REPORT

Swindon Kennels Bridge, Northumberland

Northumberland County Council

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PROTECTED SPECIES SURVEYS

Swindon Kennels Bridge, Northumberland, NE61 4LP

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1.0 EXECUTIVE SUMMARY

Total Ecology was commissioned by was commissioned by Northumberland County Council in July 2019 to undertake surveys for protected species including otter *Lutra lutra*, water vole *Arvicola amphibious* and white-clawed crayfish at *Austropotamobius pallipes* at Swindon Kennels Bridge, Northumberland following a Preliminary Ecological Assessment in 2018. The approximate National Grid Reference for the centre of the site is **NY 97336 99679**. The survey is required prior to works upon the bridge.

Surveys were carried out on the 28th August 2019 by Kevin O'Hara **(CL11 2016-21845-CLS-CLS** and **CL23/0038)**.

Three otter spraints and otter tracks were located during the survey.

No evidence of water voles or white-clawed crayfish were found.

It is therefore deemed that these species pose a negligible constraint to the proposed works. However, should any otters, water voles or white-clawed crayfish are encountered during the works, then work will stop and a suitably qualified ecologist informed.

General pollution prevention is recommended throughout the works. It is also recommended that works take place outside of the fish migratory season.

2.0 INTRODUCTION

2.1. Background

Total Ecology was commissioned by Northumberland County Council in July 2019 to undertake surveys for protected species including otter *Lutra lutra*, water vole *Arvicola amphibious* and white-clawed crayfish at *Austropotamobius pallipes* at Swindon Kennels Bridge, Northumberland following a Preliminary Ecological Assessment in 2018. The approximate National Grid Reference for the centre of the site is **NY 97336 99679**. The survey is required prior to works upon the bridge.

2.2. Site Description

The site is made up of a minor road running across Grasslees Burn, which flows into the River Coquet approximately 286m north-east of site. The bridge is located approximately 1.3km south-west of the village of Hepple, within Northumberland, with Rothbury being the nearest town, approximately 8.1km north-east of site. Immediately adjacent to site is Harehaugh Farm. Other than these small number of buildings, the site is largely surrounded by grassland and moorland. The area south of site is largely dominated by heath. To the north, land is a mixture of pasture and arable with hedgerows surrounding many fields.

2.3. Survey Objectives

The principal objective of the ecological assessment was to characterise and map the habitats present within the site. In addition, the study area was assessed for features that would indicate the presence of protected species, habitats of nature conservation importance and the presence of non-native invasive species that could represent a constraint to development. Any trees and surrounding habitats were assessed in terms of their potential to support, or actual evidence of, roosting bats. This assessment will form the basis of recommendations for further survey work and/or mitigation and compensation for the species.

2.4. Legislation

Otter

Otter *Lutra lutra* is fully protected through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and in Schedule 2 of The Conservation (Natural Habitats, &c.) Regulations 1994 as a European protected species. It is an offence under the Wildlife and Countryside Act 1981 (sections 9(1) and 9(4), Schedule 5) to

intentionally kill, injure or take any wild animal included on Schedule 5. Under Section 9(4) it is an offence to damage or destroy or obstruct access to, any structure or place which any wild animal include in Schedule 5 uses for shelter or protection, or disturb any such animal while it is occupying a structure or place which it uses for that purpose. The term given to places of shelter or protection for otters includes 'holt', 'couch' and 'den'. These terms all have slightly different origins and meaning, but all are related to places of shelter. Otter is also included as a priority species in the UK BAP.

Otters have been recorded as exploiting virtually all types of waterway in the UK including fresh water and estuarine sites and ranging in size from ditches and ponds to rivers and reservoirs (Chanin, 2003). Riparian habitat for otters however requires adequate food resources (*e.g.* fish, amphibians, crayfish) and suitable shelter (typically trees, shrubs along watercourses and potential den sites).

Water Vole

Following a severe national decline associated with habitat loss and predation by feral mink, Water Vole received habitat protection in 1998 through inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in respect of Section 9(4) only. This protection has recently been extended (6th April 2008), so the Water Vole is now fully protected under Section 9.
Legal protection makes it an offence to:

- intentionally kill, injure or take (capture) a Water Vole;
- possess or control a live or dead Water Vole, or any part of a Water Vole;
- intentionally or recklessly damage, destroy or obstruct access to any structure or place which Water Voles use for shelter or protection or disturb Water Voles while they are using such a place;
- sell, offer for sale or advertise for live or dead Water Voles.

Offences under Section 9 carry a maximum penalty of a fine not exceeding Level 5 on the standard scale (currently £5,000), imprisonment for up to six months, or both. In addition, the courts may order the forfeiture of any vehicle or other thing that was used to commit the offence.

Water Voles are listed as priority species in the UK Biodiversity Action Plan (BAP) and also in the Northumberland BAP (www.ukbap.org.uk).

Two national surveys carried out by the Vincent Wildlife Trust in 1989-90 and 1996-1998 have shown that the decline in Water Vole populations has now developed into a serious population 'crash' with a further loss of 67.5% of the occupied sites and 88% of the remaining population in only seven years.

Water Voles are typically associated with slow-flowing water ways and water bodies without extreme water level fluctuations. Water Voles prefer sites with a bank profile (soft soil to permit excavation) that shows a stepped or steep incline into which the vole can burrow and create nest chambers above the water table. The amount of bank side and emergent vegetation cover is very important, with the best sites offering a continuous swathe of tall and luxuriant riparian plants (waterside vegetation of grasses, sedges and rushes, rhizomes, bulbs and roots of herbaceous plants). Sites excessively shaded by shrubs or trees are less favourable (Strachan and Moorhouse, 2006).

White-clawed Crayfish

White-clawed crayfish are classified as Endangered in the IUCN Red List of Endangered Species and their populations are declining throughout much of their range with predictions that the species will face extinction in much of their former range within the next few decades. White-clawed crayfish populations are under threat in Britain and Ireland from a fungal disease, crayfish plague *Aphanomyces astac*i, carried by a number of introduced North American species of crayfish, and competition from alien crayfish populations.

White-clawed crayfish are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Under this Act, it is an offence to:

- Intentionally take white-clawed crayfish from the wild;
- Sell, or attempt to sell, any part of a white-clawed crayfish, alive or dead, or advertise that one buys or sells, or intends to buy or sell any part of a white-clawed crayfish.

White-clawed crayfish in England are also listed under Section 41 of the Natural Environment and Rural Communities Act (2006) and as such is a priority species for conservation. Government policy dictates that local planning authorities consider such species when determining planning applications.

The white-clawed crayfish occurs in areas with relatively hard, mineral-rich waters on calcareous and rapidly weathering rocks. They are found in a wide variety of environments, including canals, streams, rivers, lakes, reservoirs and water-filled quarries. The white-clawed crayfish is typically found in watercourses of 0.75m to 1.25m deep, but the species may occur in very shallow streams (about 5cm of water) and in deeper, slow-flowing rivers (2.5m). The white-clawed crayfish typically occupies cryptic habitats under rocks and submerged logs, among tree roots, algae and macrophytes, and holes in undercut banks. It emerges to forage for food, mainly at night. Juveniles in particular may also be found among cobbles and detritus such as leaf litter. Adults may burrow into suitable substrates, particularly in the winter months.

White Clawed Crayfish are listed as priority species in the UK Biodiversity Action Plan (BAP) and are also in the Northumberland BAP.

3.0 METHODOLOGY

3.1. Desk Based Study

A desk study was carried out as part of the original Preliminary Ecological Assessment (Total Ecology, 2018). See the original report for the specification of the desk search.

3.2. Field Survey

3.2.1. Otter, Water Vole and White-clawed Crayfish

The ecological assessment took place on the 28th August 2019 in accordance with the standard guidelines outlined in 'Ecology of the European Otter' (Chanin, 2003) and water vole survey guidelines (Strachan and Moorhouse, 2006). Refuge sampling for white-clawed crayfish was carried out following the CSM Protocol (Bradley et al. 2015).

The survey was carried out by Kevin O'Hara **(CL11 2016-21845-CLS-CLS** and **CL23/0038)**. Hydrological features, such as depth and flow rate and physical features such as width and bank profile were all noted and recorded on the survey form as background information. Information on the bank was recorded, i.e. whether it was earth, silt, canalised etc. as was the vegetation that was found along the water courses length.

The watercourse that runs under the bridge was surveyed for its ability to provide suitable habitat for water vole with a 250 metre buffer either side of the site envelope. Habitat 'suitability' was based on best practice guidance published by Strachan and Moorhouse (2006) together with surveyor experience.

The surveyor aimed to determine the presence / likely absence of water voles on the watercourse. This was achieved by walking the length of the water course as specified above looking for signs of water vole occupation as per best practice guidance.

Due to the rarity and elusive nature of the targeted species an actual sighting would prove unlikely. Evidence of Water Voles is listed below. Water Vole prints are hard to distinguish from rat prints and are therefore not a reliable field sign.

- Latrines – Latrines are established by Water Voles at the edges of their territories, where they enter and exit the water where their nests tend to be located or on physical structures such as bridge supports or rocks. Water Vole faeces are made of a few

distinct cylindrical droppings 8-12mm long and 4-5mm wide with blunt rounded ends. They are brown or green in colour depending on the food recently eaten. They may also show signs of a green ring inside the dropping when broken in half. The latrine will contain old and new piles of faeces with some droppings being flattened by the Water Vole as it scent marks its territory using its large hind feet.

- Feeding station/remains – Water Voles often have favourite, or safe, feeding stations spread throughout their territories where they collect and store a neat pile of vegetation to be eaten at a later date. The vegetation is typically 10cm in length and has been chewed at one end to a near 45-degree angle. Upon close inspection it is possible to see the clear-cut marks of the water voles front teeth.

- Runs – A run occurs where a water vole has, over a period of time, consistently used the same path for moving around. The run is normally about 5-9cm wide and can be quite complex in nature with many branches or other runs coming from it.

- Burrows – Water Voles will dig into earth banks of river channels and excavate a network of tunnels to live in. These are called burrows. They can exist above or below the water line as well as two or three metres in land, appearing as a hole in the ground. The hole is normally wider than high with a diameter of 4-8cm.

- Cropped lawn – Lawns are areas of grass found around a burrow entrance that have been grazed down to a very short level by a Water Vole. They are generally created by the female when she is reluctant to leave the burrow and her young.

- Actual sighting – Some Water Voles do not seem to be affected by human activity so an actual sighting may take place. However, caution needs to be taken when identifying a Water Vole so not as to confuse it with a Brown Rat.

  Sampling for white-clawed crayfish was undertaken in a downstream to upstream direction and all equipment was disinfected before the commencement of the survey. 100m of stream (50m either side of the bridge) was searched and at least 150 refugia were identified and then searched by hand, lifted vertically and sideways. Any crayfish noted within the watercourse were recorded.

4.0 SURVEY RESULTS

4.1. Desk Based Study

The results obtained from the MAGIC search revealed 3 statutory designated sites within 2km of the bridge; River Coquet and Coquet Valley Woodlands Site of Special Scientific Interest (SSSI), approximately 185m north, Simonside Hills SSSI and Simonside Hills Special Area of Conservation (SAC) both 1.4km south of site.

4.2. Consultation Data

Otter, Water Vole and White-clawed Crayfish

ERIC NE provided seven records of otter within 2km of Swindon Kennels bridge, including a recent record of an otter spraint 1km south-west of site.

No records of water vole were provided by ERIC. However, the banks of the surveyed section of the Grasslees Burn are also considered suitable for water voles.

Finally, a single white-clawed crayfish record was provided. The burn around the bridge is also considered suitable for white-clawed crayfish.

Consultation with ERIC NE revealed no local wildlife sites within 2km.

4.3. Field Survey Results

The survey was completed on a section of the Grasslees Burn, within the Coquet catchment. The burn flows west to east through the site. Along the section of the watercourse surveyed the banks were recorded as steep, made of both earth and sand, with boulders/ stone/ gravel. The watercourse is approximately 7 metres wide, with a depth of between 0.5 – 1m at the time of survey. The watercourse was fast flowing during the visit with relatively recent rainfall (showers). Trees were present along the banks of the burn, many overhanging the river and providing otter opportunities. Ash *Fraxinus excelsior*, alder *Alnus glutinosa* and sycamore *Acer pseudoplatanus* were dominant species. Trout species were seen within the burn during survey.

4.3.1. Otter

No otters were witnessed during the survey and no signs of otter holts were identified. However, evidence of otter use was found in the form of spraint. A total of 3 spraints

were located during the survey for otter (Photographs 4 & 5, Appendix B). One old spraint was located downstream of Swindon Kennels Bridge. Two spraints were located upstream in the form of an old spraint with a more recent one on top. All spraints were located close to the bridge itself. Near to the newer spraint, otter tracks were identified within the sandy banks.

4.3.2. Water Vole

No water vole signs were observed during the dedicated water vole survey.

4.3.3. White-clawed Crayfish

Both stone turning and kick sampling were carried out in search of white-clawed crayfish signs on site. No signs or animals were identified throughout the survey.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1. Conclusions

5.1.1. Otter

The discovery of otter spraints and tracks close to the bridge indicate that otters do frequent the area although there were no signs of a holt or resting place within the vicinity of the bridge.

The proposed works are therefore considered to pose a negligible risk to otter. If however, any otters or water voles are encountered during the works, then work will stop and a suitably qualified ecologist informed.

5.1.2. Water Vole

No signs of water vole of water vole were observed during the survey, and therefore water voles are considered to pose negligible constraint to the proposed works.

5.1.3. White-clawed Crayfish

No signs of white-clawed crayfish were identified around the bridge and it is therefore deemed that white-clawed crayfish also pose a negligible threat to the proposed works.

5.2. Recommendations

The following recommendations are made:

- Works will be carried out outside of the fish migratory season.

The following pollution control measures should be implemented:

- To prevent siltation of the watercourse, minimise the amount of exposed ground on banks from which surface water drains (e.g. caused by trampling and vehicle movements) and the period of time the ground is exposed.

- Consider the use of geotextile silt fences at the toe of the slope where ground is exposed to reduce silt transport.

- Ensure any plant and wheel washing is carried out in a designated area of hard standing at least 10 metres from the watercourse or any surface water drain

leading to it. Ensure that run-off is collected in a sump and settled solids are removed regularly.

- Any concrete and cement mixing and plant and tool washing areas should be sited a minimum of 10 metres from any watercourse or surface water drain and on an impermeable surface to minimise the risk of run off entering the watercourse (Fresh concrete and cement are very alkaline and corrosive and can cause serious pollution). Collect wash waters and, where necessary, discharge to the foul sewer or contain for disposal off site. Wash waters from concrete and cement mixing, or plant or tool washing, should never be discharged in to the water environment.

- Fuel, oil and chemical storage on site must be secure. It should be sited on an impervious base within a secondary containment system such as a bund, not within 10m of any watercourse, and above flood water level.

- Spill kits approved for the stored materials should be kept close to the fuel, oil and chemical storage area and contactors should be trained in their correct use.

- The risk of spilling fuel is at its greatest during refuelling of plant. To minimise the risk, mobile plant should be refuelled in a designated area more than 10m from any water course or surface drain. Drip trays should be placed under portable generators.

- Biodegradable hydraulic oil should be used in plant working in or near watercourses. Biodegradable chainsaw bar lubricant should be used in chainsaws used above or near watercourses.

- If cleaning of stonework is to be undertaken use physical cleaning instead of liquid chemicals such as caustic and acid solutions. Wherever possible contain wastewaters from surface washing and agree the disposal method with the Environment Agency as part of an environmental management plan.

- Use vacuum attachments on power tools wherever possible to reduce dust generation. If using high-pressure water or steam cleaners to clean stone work avoid using grit blasting with slag-derived grit as this can contain significant levels of heavy metals such as copper and can be toxic to the water environment. The

use of garnet, low silica abrasive or recycled glass media with vacuum attachments will reduce the potential for contamination.

- All contractors should be fully briefed on the pollution control measures to be adopted on site and the importance of not allowing waste materials or pollutants to enter the watercourse.

- Any pollution incidents such as fuel spillage, discharge of contaminated or silt-laden run-off to a watercourse, or disturbance to the river bed should be immediately reported to the EA Incident Hotline on 0800 80 70 60.

5.2.1 Potential Habitat Enhancements

Given the trees adjacent to the watercourse, bats may utilise the area as connecting habitat within the wider area, and foraging habitat. Therefore, the addition of bat boxes will enhance the area for bats. Bat boxes should be placed on the south or west elevations of trees approximately 4-6m from the ground. Further information and advice on which bat boxes would be suitable can be obtained from Total Ecology Ltd.

6.0 REFERENCES

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Strachan, R. & Moorhouse, T. (2006) *Water Vole Conservation Handbook- Second Edition*. Oxford: Wildlife Conservation Research Unit, Oxford.

Total Ecology Ltd. (2018) Swindon Kennels – Phase 1 Report

APPENDIX A

Survey Sheets

Otter Survey Form

Site Details		Survey Details	
Code	N/A	Name	K O'HARA
Name	SWINDON KENNELS BR	Date	26/8/2019
Catchment	COQUET - GRASSLEES BURN	Weather	DRY
Type	STREAM	Grid Ref	NY 97333 99683

Watercourse Information

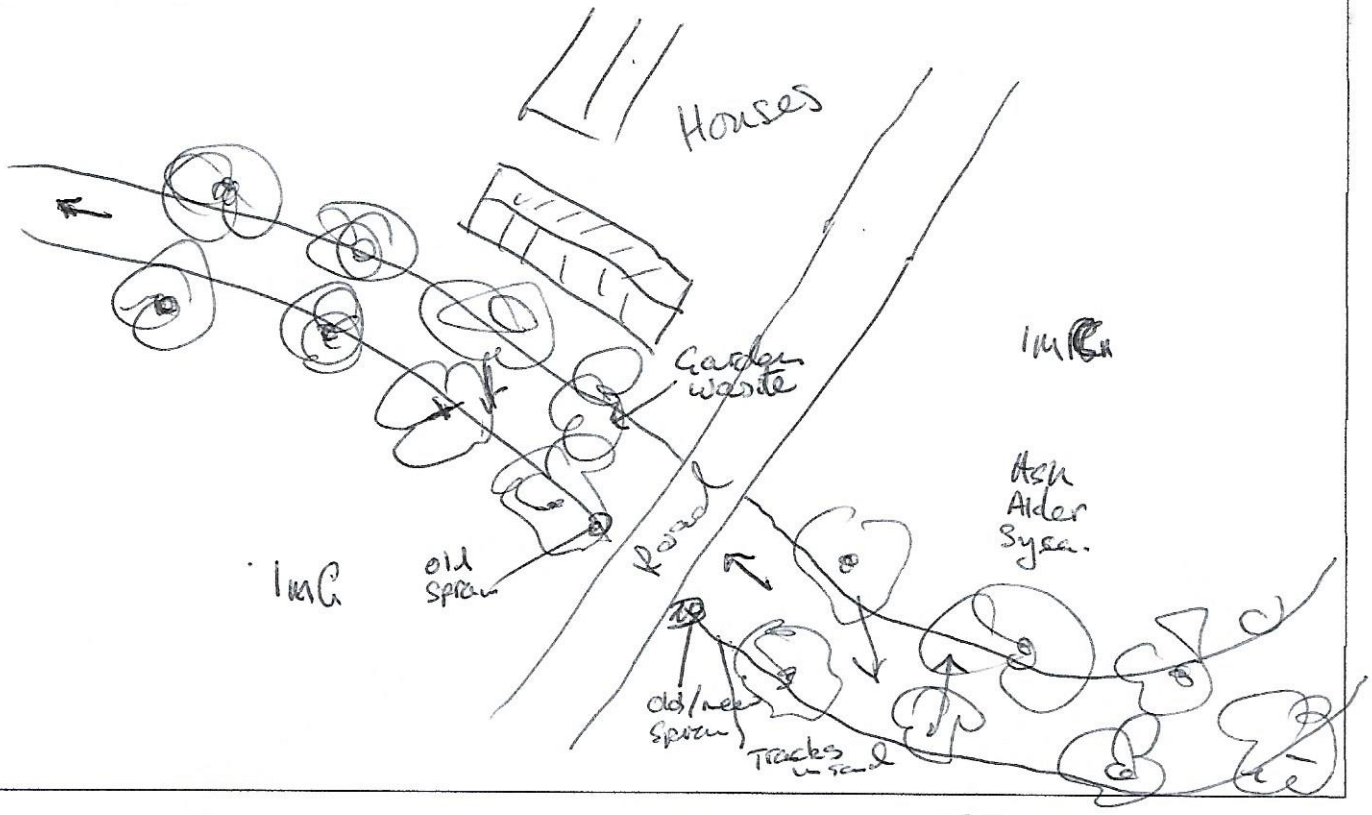
Habitat		Shore/Bank		Vegetation		Width (m)	
Running Water	✓	Boulders/Stones/Gravel	✓	Bankside Trees	A	<1	
Ditch		Sand	✓	Bushes	A	1-2	
Dyke		Silt		Herbs	O	2-5	
Gravel Pit		Earth	✓	Submerged Weed	N	5-10	✓
Pond		Rock Cliffs		Reeds/Sedges	N	11-15	
Lowland Lake		Earth Cliffs		Tall Grass	O	15-20	
Reservoir		Reinforced (natural)		Short Grass	O	20-25	
Channel Inflow		Reinforced (man-made)		Invasive Species	N	25-30	
Channel Outflow		Poached		Bare/None	N	30-40	

Otter Presence

Otter Signs	Y	N	Other – please specify
Spraint	✓		
Collected?		✓	
Footprints	✓		**Location (rock/man-made structure/log/etc.)**
Feeding Remains		✓	
Other (ps)		✓	

Comments/sketch:

Old spraint with one fresh on top on upstream side of bridge. Old spraint on downstream side. Recent rain will have effected results.



RP - Sheep

WCC

Fuldt search of WCC undertaken, stone turning + Kick sampling - No evidence found of presence burrows, caste shells or previous records at this site or catchment

Water Vole Survey Form

BACKGROUND INFORMATION

Site	Scawdon Kennels Be	**Date**	26-8-19
Water body	GRASSCEES BURN	**Grid reference**	
Surveyor	K O'HARA	**Survey Length (m)**	
Weather	Breezy Dry	**Recent Weather**	Mixed H Showers. Sun

HABITAT INFORMATION

Habitat
- ☐ Ditch
- ☐ Dyke
- ☐ Gravel Pit
- ☐ Pond
- ☐ Lowland lake
- ☐ Reservoir
- ☑ Running water
- ☐ Marsh/Bog
- ☐ Channel Inflow
- ☐ Channel Outflow

Bed Substrate
- ☐ Stones
- ☐ Gravel
- ☐ Sand/silt
- ☐ Artificial

Shore/Bank
- ☑ Boulders
- ☑ Stones
- ☑ Gravel
- ☑ Sand
- ☐ Silt
- ☐ Earth
- ☐ Rock Cliffs
- ☐ Earth Cliffs
- ☐ Poached
- ☐ Reinforced (natural materials)
- ☐ Reinforced (man-made)

Bordering Land Use
- ☑ Upland Grass
- ☑ Permanent/Temporary Grass
- ☑ Mixed Broadleaf Woodland
- ☐ Conifer Wood
- ☐ Peat Bog
- ☐ Arable Crop
- ☐ Urban- Industrial /Housing
- ☐ Park/ Garden
- ☐ Heath
- ☐ Fen
- ☑ Livestock Grazing
- ☐ Fenced

Bank Profile
- ☐ Flat <10°
- ☐ Shallow <45°
- ☑ Steep >45°
- ☐ Vertical
- ☐ Undercut

Current
- ☐ Static
- ☐ Slow
- ☐ Sluggish
- ☑ Fast
- ☐ Rapid

Width (m) ☐ 1–2 ☑ 5 – 10 ☐ 20 – 40 ☐ < 1 ☐ 2 – 5 ☐ 10 –20 ☐ >40

Depth (m) ☑ 0.5 – 1 ☐ > 2 ☐ < 0.5 ☐ 1 – 2

Vegetation
Dense/Abundant/Frequent/Occasional/Rare/None

- A Bankside trees
- A Bushes
- O Herbs
- N Submerged weed
- N Reeds/Sedges
- O Tall Grass
- N Short Grass

Disturbance Level (1= Low – 5= High) 1

Type of Impact:

WILDLIFE INFORMATION

Water Voles
- ☐ Sightings (count)
- ☐ Latrines (count)
- ☐ Burrows (count)
- ☐ Footprints
- ☐ Runs in vegetation
- ☐ Feeding Remains
- ☐ Grazed areas around burrow entrance

Rat
- ☐ Sightings
- ☐ Droppings
- ☑ Tracks

Mink
- ☐ Sightings
- ☐ Scats
- ☑ Tracks

Otter
- ☐ Sightings
- ☑ Spraints
- ☑ Tracks

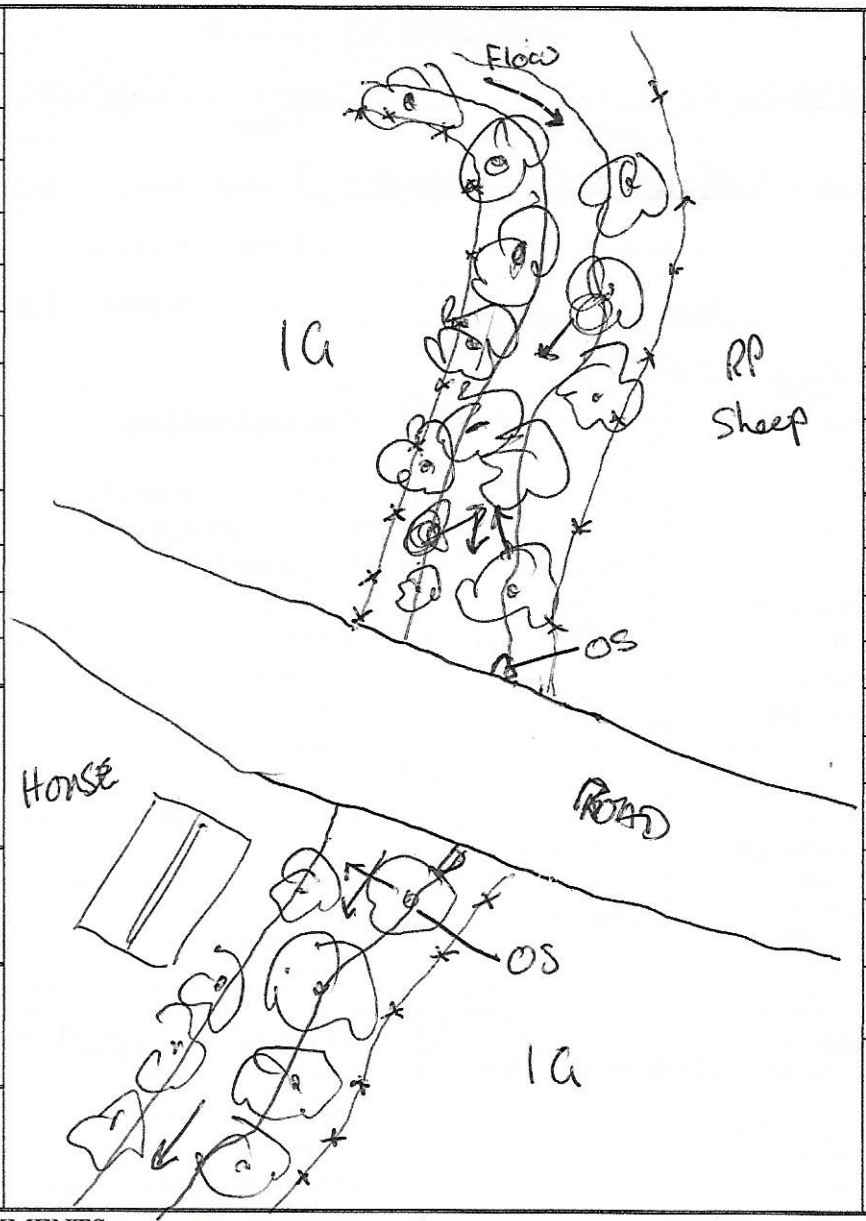
Other Wildlife:

Identified Plant Remains from Water Vole Feeding Remains:

SKETCH OF SITE including Water Vole Activity (if any)

Key to Symbols (mark route and direction of survey)

Mature Trees	
Overhanging Branches	
Fallen Tree	
Exposed Roots	
Pollarded Tree	
Sapling	
Scrub	
Hedgerow	
Fence	
Reed/Sedge Bed	
Flood Bank	
Artificial Bank	
Earth Cliff	
WATER VOLES:	
Sighting	**WVS**
Latrine	**WVD**
Burrow	**WVB**
Tracks	**WVT**
Feeding Signs	**WVFS**
RATS:	
Sighting	**RS**
Dropping	**RD**
Tracks	**RT**
OTTER:	
Sighting	**OS**
Spraint	**OD**
Tracks	**OT**
MINK:	
Sighting	**MS**
Scat	**MD**
Tracks	**MT**



ADJACENT LAND-USE CODES	
Broadleaf Woodland	**BW**
Conifer Woodland	**CW**
Moorland/ Heath	**MH**
Rough Pasture	**RP**
Wetland	**WL**
Improved Grass	**IG**
Tilled Land (crop)	**TL**
Suburban/Urban Dev. (inc.gardens)	**URB**
OTHER FEATURES	
Roadbridge	
Footbridge	
Weir	
Culvert	
Ford	
Outfall	
Dredgings/ Spoil	
Silt Bars	
Islands (mark position & size)	

NOTES & COMMENTS

Typical upland stream trout spp. observed peaty water. two otter spraints either side of bridge No water vole signs no crayfish. Sg Ash Alder trees dominant river corridor many hang of falling over the channel. No suitable WVole habitat

APPENDIX B

Selected Photographs

Photograph 1 – Swindon Kennels Bridge as on 28th August 2019.

Photograph 2 – Grasslees Burn beneath Swindon Kennels bridge.

Photograph 3 – Watercourse showing overhanging trees.

Photograph 4 – Otter spraint located during survey.

Photograph 5 – Otter spraint located during survey.

APPENDIX C

Report Conditions

Total Ecology Ltd.

REPORT CONDITIONS
Swindon Kennels

This report is produced solely for the benefit of Northumberland County Council and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to Total Ecology Ltd. In time improved practices, fresh information or amended legislation may necessitate a re-assessment. Opinions and information provided in this report are on the basis of Total Ecology Ltd. using due skill and care in the preparation of the report.

This report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times.

This report is limited to those aspects reported on, within the scope and limits agreed with the client under our appointment. It is necessarily restricted and no liability is accepted for any other aspect. It is based on the information sources indicated in the report. Some of the opinions are based on unconfirmed data and information and are presented as the best obtained within the scope for this report.

Reliance has been placed on the documents and information supplied to Total Ecology Ltd. by others but no independent verification of these has been made and no warranty is given on them. No liability is accepted or warranty given in relation to the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report.

Whilst skill and care have been used, no investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather related conditions.

Although care is taken to select monitoring and survey periods that are typical of the environmental conditions being measured, within the overall reporting programme constraints, measured conditions may not be fully representative of the actual conditions. Any predictive or modelling work, undertaken as part of the commission will be subject to limitations including the representativeness of data used by the model and the assumptions inherent within the approach used. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions.

The potential influence of our assessment and report on other aspects of any development or future planning requires evaluation by other involved parties.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are

incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Total Ecology Ltd. accept no liability for issues with performance arising from such factors

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