

Denny to Wishaw Network Upgrade

Environmental Impact Assessment Report

Volume 3 Appendices

Appendix 8.10 Upgraded Lines Otter and Water Vole Results

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Water Vole Results



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Appendix 8.10

1.1 Introduction

This Appendix accompanies Chapter 8 Biodiversity of the EIA Report (Volume 1: Main Report). It describes in detail the methodology and results of desk study and field survey carried out to establish baseline conditions in the Zone of Influence (ZoI) of the Uprated Overhead Lines components of the Project with respect to otter *Lutra lutra* and water vole *Arvicola amphibius*¹.

This Appendix is supported by Figure 8.7: Otter and Water Vole Survey Results (Volume 2: Figures).

Within this Appendix, any activities relating to the Uprated Overhead Lines are referred to as the “Works”, and the “Site” is the precise area in which the Works are located.

Relevant legislation and national planning policy pertaining to the protected or notable mammal species are discussed in Chapter 8 Biodiversity.

1.2 Methodology

Desk study methods and ZoI used are described in Chapter 8 Biodiversity.

Field Survey

All otter and water vole surveys relating to this Appendix were conducted between 29 July 2025 and 24 November 2025.

Surveys for otter and water vole were carried out in all suitable habitat (limited to linear waterbodies), where access was possible and safe, within the relevant ZoI from Works which was 200 m for otter and 50 m for water vole. Where fossorial water voles were of concern, particularly in grasslands east of Glasgow, surveys for water vole were conducted concurrently with other protected mammal and habitat surveys. The survey areas for otter and water vole are shown on Volume 2, Figure 8.7.

Surveys followed guidance in published literature^{2, 3, 4, 5, 6, 7}. Evidence found during surveys was mapped along with any relevant field notes. Surveyors walked in the channel of watercourses where possible and visually inspected all parts of the banks. Where dense vegetation (especially scrub) or soft substrate prevented this, searches for field signs were made as far as access allowed from the top of the bank.

¹ The otter and water vole methods and results for other components of the project are detailed separately in Appendix 8.3 for the New Build Overhead Line, AA Route Undergrounding and CB Route Removal, and within the main chapter for the Substations.

² Campbell, R.D., Harrington, A., Ross, A. and Harrington, L. (2012). Distribution, population assessment and activities of beavers in Tayside. Scottish Natural Heritage Commissioned Report No. 540.

³ Chanin, P. (2003). Monitoring the Otter *Lutra lutra*, Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature, Peterborough.

⁴ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook. The Mammal Society, London.

⁵ Liles, G. (2003). Otter Breeding Sites. Conservation and Management, Conserving Natura 2000 Rivers Conservation Techniques Series No. 5. English Nature, Peterborough.

⁶ Strachan, R. (2007). National survey of otter *Lutra lutra* distribution in Scotland 2003-04. Scottish Natural Heritage Commissioned Report No. 211 (ROAME No. F03AC309).

⁷ Strachan, R., Moorhouse, T. and Gelling, M. (2011). Water Vole Conservation Handbook (3rd Edition). Wildlife Conservation Research Unit, University of Oxford.

Evidence of otter searched for included refuges (holts and layups), spraints (faeces), footprints, trails, and foraging signs. Where found, spraints were recorded as fresh, recent, or old, according to their apparent age / physical attributes.

Evidence of water vole searched for included latrines, footprints, droppings, burrows, trails, and foraging evidence.

Limitations

Only one water vole survey was conducted during one period (in summer), whereas *The Water Vole Mitigation Handbook*⁴ recommends two surveys, conducted in spring and summer to account for seasonal changes in distribution. As a result, there could be undetected presence of water voles, as early-season territorial signs may have been missed or obscured by dense summer vegetation. However, this is unlikely given that evidence of the species was able to be identified, and that the surveys took place during the optimum period for survey, during the water vole breeding season. Regardless, a precautionary approach was taken, taking account of both areas of suitable water vole habitat as well as confirmed field signs within the impact assessment and embedded mitigation measures, setting a requirement for pre-construction surveys, which will in effect provide a second survey, and any required mitigation and licensing will be determined through these surveys.

While the majority of the Site was accessible, certain areas could not be fully surveyed due to health and safety constraints, such as impenetrable vegetation or unsafe terrain. These data gaps are localized and are not considered to significantly undermine the overall assessment. All non-accessed areas are detailed in Table 1-1 below.

Table 1-1 Survey Limitations and Areas of Restricted Access

General Location / OSGR	Description of Limitation and Ecological Implications
ZG Line	
NS 82557 84061	Small tributary not accessed. Habitat at accessible points was assessed and no significant data gaps are anticipated.
NS 83695 83374	Dense Rhododendron <i>Rhododendron sp.</i> prevented bankside access. Pre-construction checks are recommended if clearance is required in this area.
NS 83800 82631	Small ditch through dense, shaded vegetation. Low suitability for water vole and no otter evidence recorded nearby.
XX and XR Line	
NS 77880 66256	Large pond / wetland fenced off. Banks assessed as generally unsuitable for holts, except for a culverted section to the southwest.
North Calder Water	East / southeast bank not surveyed as it was an active construction site at the time of the visit.
East Calder Water	River in spate at the time of survey; potential for field signs to be washed out. Western bank was unsafe to survey due to steep, unstable ground.

General Location / OSGR	Description of Limitation and Ecological Implications
NS 83854 58581	Small tributary west of XR021 tower compound not surveyed. Habitat in the vicinity is considered of poor quality of otter.
South Calder Water	Survey conducted post-rainfall; field signs may have been obscured or washed away.
NS 80660 53845	Gowkthrapple Burn not surveyed due to dense bankside vegetation. Habitat appears generally unsuitable (shallow)

1.3 Baseline Conditions

Otter

Desk Study

The Wildlife Information Centre (TWIC) returned two records of otter, both of which were roadkill.

The National Biodiversity Network (NBN) Atlas returned no records for otter within the 1km of the Site.

Field Survey

Overall, the Site provides limited habitat suitability for otter. Generally, the larger watercourses within the survey area have potential for to support otter, which suitable features for use as resting sites otter resting sites due to their sloping banks, scrub and / or trees on banks and the rivers provide suitable foraging habitat and passage for commuting. These watercourses include Auchter Water, River Carron, North Calder Water and South Calder Water. However, SEPA has classified all of these rivers as having 'Poor' fish suitability and 'Poor' in fish barriers, therefore there might be limited foraging opportunities.

During the field surveys, where otter refuges contained otter spraints, they are considered "confirmed" features. In total, three otter resting sites comprising one holt and two lay-ups were identified within the survey area.

In addition to the resting sites, 27 spraint locations were identified (a single spraint location may have multiple spraints present) as well as six instances of otter footprints. All otter related features are displayed in Volume 2, Figure 8.7.

Table 1-2 Otter resting site details

Reference	Feature	Feature Description	Location (OSGR) and Watercourse	Relationship to the Site
ZG.O.01	Lay-up	Cavity caused by eroded bank under lime tree roots, connected to river via a slide. Feature does not extend and is too exposed and open for a holt. Two old spraints within.	NS 83804 81574 River Carron	Located 56.7m west of the ZG011 compound area and 42m north of the proposed access track.
XR.O.01	Lay-up	A lay-up located within an ash tree's roots. A 10cm x 7cm tunnel extends north into the structure. One fresh and two recent spraints.	NS 84706 55772 Auchter Water	Located 183.7m south of the visibility splays area and 186.2m south of the proposed access track.
XR.O.02	Holt	Cavity identified within a rock face with a tunnel extending towards southeast. A well-defined slide connects the entrance to the watercourse. One old spraint was recorded at the base of the overhang.	NS 83687 54836 Auchter Water	Located 115.2m south of the XX034 compound area and 148.75m south of the proposed access track.

None of the recorded resting sites are considered viable as natal holts. Natal holts are generally difficult to find, since breeding female otters tend to be secretive and locate them such that they are not obvious, where risk of cub predation is not high. Thus, natal holts are thought to typically be located in more secure locations. Furthermore, optimal habitat for otter breeding sites includes vast reed beds, lakes and ponds, deciduous woodland, young conifer plantations, extensive areas of scrub, features such as large areas of blockstone or boulders, and buildings / structures immediately adjacent to watercourses (Liles, 2003)⁵, no holts were recorded near to such features

Water vole

Desk Study

No records of water vole were returned either by the NBN Atlas or TWIC within 1km of the Site.

National Water Vole Database Project⁸ indicates that there is a single 10km grid square (NS96) which overlaps with the Site, located around Shotts.

Field Survey

Water vole surveys identified a localized presence of the species within the survey area. Evidence of activity was recorded across three specific locations, labelled as XX.WV.01, XX.WV.02, and XX.WV.03. Furthermore, two additional areas were recorded as suitable for water vole but no water vole specific evidence was found; those are XR.WV.01 and XR.WV.02. All of the water vole areas are described in Table 1-3 below.

Table 1-3 Water Vole areas

Reference	Description of Area	Evidence of water vole identified	Relationship to the Site and OSGR
XX.WV.01	A large and deep pond in a neutral grassland with localised willow <i>Salix sp.</i> , alder <i>Alnus glutinosa</i> , and birches. Along its margin the pond supports bulrush <i>Typha latifolia</i> and bottle sedge <i>Carex rostrata</i> . Pondweed <i>Potamogeton sp.</i> are found in localised patches.	Three burrows and eight latrines	Located around 63m west of tower compound XX008. NS 72115 67667
XX.WV.02	A damp expanse, which is essentially dry, covered in soft rush <i>Juncus effusus</i> and bulrush. Small pockets of water support pondweed. A single ditch flowing through, which is around 0.3m wide and around 0.1m deep maximum. The banks are stable and vegetated with grasses	Two burrows were found on the top of the bank, but other positive water vole signs recorded	Located around 25.5m west of the visibility splays area and 52m north of XX025 tower compound area. NS 76706 67355

Though burrows were identified during field surveys, only latrines and droppings can be used to confirm current occupation by water voles. This is due to the ability for burrows to persist, potentially between years, and because the occupation of burrows by other species such as rat *Rattus norvegicus* cannot be ruled out. Therefore, only XX.WV.01 is currently confirmed to be occupied by water voles.

⁸ The Wildlife Trusts (2024). *The National Water Vole Database Project*. Available at: <https://www.wildlifetrusts.org/national-water-vole-database-project>

1.4 Summary

The desk study indicated that otter is present within some sections of the Site, and that there is suitable habitat for otter foraging, commuting and refuge, associated closely with larger watercourses. The survey identified three otter refuges (one holt and two lay-ups) along River Carron and Auchter Water, as well as 27 spraints along the watercourses across the Site.

The desk study indicated that the Site overlaps with a single 10km grid square recognised by the National Water Vole Database Project to contain water vole. Suitable habitat for water vole was present throughout the Site, associated with waterbodies or minor watercourses. The field surveys identified a single area with confirmed water vole presence around a pond, containing three burrows and eight latrines.