

Appendix D7

Water Vole Report

A77 Maybole Bypass

Water Vole Species Report

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Executive Summary

This report details the findings of a water vole survey undertaken April 2013 at the proposed site for A77 Maybole Bypass. The information provided within this report supplements the baseline ecological data outlined within Chapter 6 Ecology and Nature Conservation and informs the overall assessment within the Chapter.

The habitats present at the proposed site were assessed within the Ecology and Nature Conservation chapter as being suitable for water vole. This was based on the assessment of the habitats present during the Phase 1 Habitat Surveys in 2012.

The methodology and findings of the water vole survey undertaken in 2013 are presented below and should be read in conjunction with the Ecology and Nature Conservation chapter.

Although water vole was not confirmed to be present on site, it is not possible to confirm their absence due to the limitations of the survey.

It is recommended that a further field survey is conducted at the end of the optimal survey period in September in order to be able to confirm the absence of water vole in the area proposed for development.



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1. Introduction

1.1. Report Overview

- 1.1.1. This report details the findings of a water vole survey undertaken during April 2013 at the proposed site for the A77 Maybole Bypass (Drawing No. 25000182/LND/024). The information provided within this report supplements the baseline ecological data outlined within Chapter 6 Ecology and Nature Conservation and informs the overall assessment within the Chapter.
- 1.1.2. The habitats present at the proposed site were assessed within the Ecology and Nature Conservation chapter as being suitable for water vole. This was based on the assessment of the habitats present during the Phase 1 Habitat Surveys in 2012.
- 1.1.3. The methodology and findings of the water vole survey undertaken in 2013 are presented below and should be read in conjunction with the Ecology and Nature Conservation chapter.

1.2. Water Vole

- 1.2.1. The water vole *Arvicola terrestris* which is a member of the Cricetidae family of rodents, is the largest of the British voles, weighing between 200 and 350g. Males are generally larger than females and have broader heads and muzzles. Otherwise, the sexes look very similar.
- 1.2.2. Water voles are one of the most threatened native mammals in Britain (Strachan et al, 2000; SNH, 2012). Scottish water voles are genetically distinct from those in the rest of the UK. The voles that colonised England and Wales following the last Ice Age originated from South East Europe, whereas Scotland's voles appear to be descended from migrants from northern Iberia (SNH, 2012).
- 1.2.3. A water vole has the typical 'rotund' appearance of a vole, i.e a short, rounded muzzle, small indistinct ears and brownish or black fur which extends to cover the tail, which is about three-quarters of the body length (SNH, 2012).
- 1.2.4. Habitat preferences include water side locations such as rivers, streams, ditches, canals and ponds. They require soft natural banks in which to burrow and prefer banks that are open to light and have a good growth of vegetation.
- 1.2.5. Water voles are preyed upon by a range of native predators including stoats, weasels, otters, foxes, rats, various birds of prey and herons. However, it is the American mink *Mustela lutreola* which has a detrimental impact on population levels of water vole (Raynor, 2010).

Surveying for Water vole

- 1.2.6. Water vole are largely nocturnal but can be seen at any time of the day. However, they also leave a number of distinctive field signs which can indicate their presence.

- 1.2.7. Their droppings are the most distinctive field sign and are usually deposited in latrines which are typically found at prominent points along the watercourse, such as on flat stones or on patches of bare earth along the margins. They are cylindrical with blunt ends, about 8-12 mm long and 4-5 mm wide and vary in colour from greenish (usually when fresh) to brown or black (Raynor, 2010). Droppings can be described as being 'tic tac' shaped.
- 1.2.8. Water voles use a network of burrows at and around the water's edge or can usually be found within 3m of the watercourse. Burrows may also extend for up to 5 m from the bank top edge and if recently occupied may have a neatly cropped 'lawn' around them. The burrows are usually distinctive, being typically slightly wider than high and with a diameter of between 4-8 cm. There may also be droppings near the burrow entrances (Raynor, 2010).
- 1.2.9. Water voles are almost entirely vegetarian. They often feed at regular locations near to the water's edge where they may leave neat piles of grass stalks and plant stems (5-10cm in length). The stalk ends are often diagonally cut at 45° and occasionally show incisor marks. Other field signs include pathways and prints (London Wildlife Trust, 2012).

1.3. Study Area Context

- 1.3.1. A Phase 1 habitat survey was undertaken during August and September 2012, which identified the potential for water vole within the survey area. The survey area extended 500m from the centreline of the proposed new route.
- 1.3.2. The Phase 1 habitat surveys showed that there was suitable habitat for water vole throughout the survey area due to numerous slow-flowing watercourses, ditch systems and overgrown field drains.
- 1.3.3. "Good quality water vole habitat comprises sedge-rich habitat mosaics, including grasses, rushes and ericaceous vegetation adjacent to slow flowing, shallow burns with moderate bank angles and penetrable substrate. In terms of vegetation composition these riparian habitats are precisely those likely to be favoured by grazing deer and sheep and are in consequence potentially vulnerable to both excessive grazing and poaching." (Capreolus Wildlife Consultancy, 2005).
- 1.3.4. During the survey, deer pellets and deer and sheep footprints were observed throughout the scheme in abundance. Deer and sheep traversing the area appeared to have caused disturbances to suitable habitat for water vole.

2. Methodology

2.1. Policies

The UK Biodiversity Action Plan (1994)

- 2.1.1. The world-wide aim of conserving biodiversity began at the 'Earth Summit' in Rio de Janeiro in 1992 where the Convention on Biological Diversity was one of the initiatives. At the Rio summit, the UK was one of 150 governments to sign up to the convention. To achieve its commitment the UK government published the UK Biodiversity Action Plan (UKBAP) in 1994.

The Scottish Biodiversity Strategy (2004)

- 2.1.2. In Scotland the Scottish Biodiversity Forum was set up to translate the UKBAP into specific action plans for Scotland. The forum has produced 'Scotland's Biodiversity – It's in Your Hands', a strategy for the conservation and enhancement of biodiversity in Scotland. The strategy maps out a 25 year framework for action to conserve and enhance biodiversity for the health, enjoyment and well-being of all the people of Scotland.

The Scottish Biodiversity List (2005)

- 2.1.3. The Scottish Biodiversity List is a list of animals, plants and habitats that are considered to be of principal importance for biodiversity conservation in Scotland. The list was published in 2005 to satisfy the requirement under the Nature Conservation (Scotland) Act 2004. Water vole are recorded under the list and have experienced a 25% decline in Scotland.

Ayrshire Biodiversity Action Plan (2007-2010)

- 2.1.4. The first Ayrshire Local Biodiversity Action Plan (LBAP) was completed in 2001 and covered an action plan for 2001-2005. The original Ayrshire LBAP included 26 Habitat Action Plans and 11 Species Action Plans. Since the original Ayrshire LBAP, The Scottish Biodiversity Strategy and Scottish Biodiversity List implementation has seen the need for the Ayrshire Plan to undergo a revision. The Ayrshire Biodiversity Action Plan was completed in 2007.

- 2.1.5. Water vole have a Species Action Plan under the Ayrshire LBAP and are identified specifically under the following key habitats for water vole:

- Upland Heath
- Blanket Bog

2.2. Legislation

- 2.2.1. Water voles receive limited legal protection through their inclusion in Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and enhanced by the Nature Conservation (Scotland) Act 2004.
- 2.2.2. It is an offence to intentionally or recklessly:
- Damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection, and;
 - Disturb water voles while they are using such a place.

3. Methodology

3.1. Desk Study

- 3.1.1. A desk top survey was carried out by accessing the National Biodiversity Network Gateway (NBN) for any records of water vole within 5km radius.
- 3.1.2. The DMRB Stage 2 report produced by Atkins (2007) was referred to for any historical information regarding water vole.

3.2. Field Survey

- 3.2.1. The objectives of the water vole survey were to identify and record all evidence of activity in the watercourses identified during the Phase 1 habitat survey conducted in August and September 2012 as being potentially suitable to support water vole.
- 3.2.2. The water vole surveys were carried out by Amey Ecologists Melanie Roxburgh, Sinéad Thom and Gavin Boyd on the following dates:
 - 9th April 2013
 - 10th April 2013
 - 11th April 2013
 - 16th April 2013
- 3.2.3. Surveying for reliable environmental assessment was undertaken during the optimal survey period for finding water vole breeding territories marked by latrines (April to September).
- 3.2.4. Surveying was carried out in accordance with the methodology outlined in the Water Vole Conservation Handbook (Strachan and Moorhouse, 2006).
- 3.2.5. Survey was conducted from both banks where possible by observing any obvious field signs on the opposite banks.
- 3.2.6. Field signs to record included:
 - Latrines, showing discrete piles of droppings;
 - Feeding stations or chopped vegetation;
 - Tunnel entrances above and below water with a cropped 'garden' or 'lawn' around the tunnel entrance;
 - Paths and runs at the water's edge, runs in the vegetation and footprints in the mud; and,
 - Sightings, sounds of entering water.
- 3.2.7. Field surveys were used to confirm the presence or absence of water voles from the site and the surrounding area.



3.3. Survey Limitations

- 3.3.1. Lack of evidence of water vole activity does not necessarily preclude presence at a later date.

4. Results

4.1. Desk Study

4.1.1. A search using the NBN gateway highlighted that approximately 4km north east from the scheme a record of water vole was recorded at Grid Reference: NS3713 (Biological Records Centre, 1993).

4.1.2. The DMRB Stage 2 report produced by Atkins (2007) identified habitat which had the potential to support water vole, however no field signs were recorded.

4.2. Field Survey

4.2.1. No field signs were recorded on any of the suitable habitat identified as having potential to support water vole.

4.2.2. During the field surveys, otter spraint was recorded in abundance on the majority of watercourses located within the survey area.

4.2.3. Deer and sheep footprints were observed throughout the scheme in abundance.

5. Conclusions and Recommendations

5.1.1. No field signs for water vole were observed during the field surveys undertaken:

- 9th April 2013
- 10th April 2013
- 11th April 2013
- 16th April 2013

5.1.2. Records of water vole were recorded prior to 1993 approximately 4km north east from the area surveyed (Biological Records Centre, 1993).

5.1.3. Otter was confirmed to be present in suitable water vole habitat, no mink field signs were identified. As a result there is reduced risk of predation of water vole from mink, increasing favourable conditions for water vole to populate.

5.1.4. Deer and sheep traversing the area appeared to have caused disturbances to suitable habitat for water vole.

5.1.5. Water vole was not confirmed to be present on site. However, as this does not preclude their presence at a later date, it is recommended that a further field survey is conducted prior to construction.

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