



**M74 JUNCTION 5, RATH
DUSK AND DAWN ACTIVITY ASSESSMENT FOR THE
PRESENCE OF BAT ROOSTS**

Final Report

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1 Introduction

1.1 Background

This study was undertaken as part of a suite of ecological surveys necessary to inform the Design Manual for Roads and Bridges (DMRB) Stage 3 assessment for proposed improvements to the M74 Junction 5, Raith. This report presents the findings of dusk and dawn bat activity surveys which were conducted in September 2006. These surveys follow on from a habitat-based assessment undertaken by a licensed bat consultant in September 2005 focused on areas in the vicinity of the junction identified as having potential to support bat roosts (identified during the extended Phase 1 habitat surveys for the DMRB Stage 2 assessment in 2004). This report also includes recommendations to limit disturbance to any individual bats, or bat roosts that may potentially be present.

2 Objectives of the Study

The objectives of the study were to:

- document the bat interest of habitats that are scheduled to be lost as a result of the proposed improvement works to the junction;
- evaluate the bat interest of the area;
- recommend further survey requirements, if necessary; and
- to outline mitigation measures to minimise any identified impacts.

3 Survey methodology

A daytime visit was made at the end of September 2005 by an experienced YA bat consultant (J. Colebrook, SNH bat licence number 5499) and assistant, to evaluate the potential bat interest and identify the need for further survey. The assessment concentrated on identifying locations where combinations of potential roosts and foraging areas existed and were linked to the wider countryside by “flight lines” such as hedges, rivers, or patches of woodland and trees.

One location identified as providing good quality bat habitat and potential roost sites was subjected to a dusk and dawn bat activity survey in September 2006. Times for dusk and dawn were identified using the Metcheck website. The survey area was visited one hour before dusk to identify a transect to be walked which was marked on a map of the site, and to identify any potential hazards. Bat activity surveys started half an hour before dusk, Petterson ultrasound detectors were used to detect bat activity. The transect was slowly walked by the surveyors, with stops at points along the transect to listen for 5-10 minutes at a time. The number and position of these stops was dependant on the size of the area, features of particular interest and bat activity. The locations of bats detected during the survey were marked on the map of the survey area along with the time and the direction the bat was travelling in (spiral if it was feeding). Also recorded on a separate bat activity form was the species, the time it was detected at, what direction it was travelling in if that could be determined (spiral if feeding) and the type of activity the bat was undertaking e.g. commuting, emerging from roost, feeding etc. Surveys continued for at least an hour and a half after dusk. The surveys was

undertaken when the night time temperature was around 10 degrees or above and not during heavy rain or strong winds.

4 Limitations of the Survey

Bat roosts in structures such as trees are recognised as being very difficult to detect, especially in extensive high quality habitat with a multitude of potentially suitable roost sites. Limitations on surveyor time and numbers as well as health and safety considerations preclude detailed inspection and emergence surveys of all individual trees with potential to support roosting bats. As such it is considered appropriate in this case to use levels of bat activity and bat behaviour as an indication as to the value of particular habitats to local bat populations and the likelihood of roosting bats being present.

Lack of evidence of protected species does not necessarily preclude their being present on site at a later date. Particularly in relation to use of structures and trees by bat species, use of a particular structure or area of land can significantly vary not only on a seasonal basis but also from day to day. However, it is considered that the timing of the surveys, in mid to late summer, was satisfactory for the activity-based assessment.

The weather conditions on the night of the survey was optimal.

5 Existing conditions and survey findings

6 Consultation and Data Review

No records were available for the survey area.

7 Survey Findings

Walkover and dusk/dawn survey locations are shown on Figure 1.

Bothwell Landscaping Woodland (Area 1)

This location consists of young mixed plantation dominated by birch with frequent larch *Larix decidua*, hawthorn, rowan *Sorbus aucuparia*, ash and whitebeam *Sorbus aria*. The plantation mainly occupies flat area of land positioned between two roads and the River Clyde and a steep bank leading down to the river. At the bottom of the slope by the river a limited number of mature trees are located including horse chestnut, willow and ash. The young dense plantation combined with areas of rough and marshy grassland and scrub in more open areas sheltered by the surrounding trees provide excellent foraging habitat for bats. However trees displaying features of interest for use by roosting bats are extremely limited.

Area 1 was surveyed at dusk on 7th September 2006 and at dawn the following day. Weather conditions were clear and slightly cool but with no breeze.

No bat roosts were confirmed. Common and soprano pipistrelle bats were recorded feeding frequently at both dusk and dawn in the sheltered centre of the plantation, on the scrub covered slope down to the river and along the river itself. The first bat detected at



dusk, a soprano pipistrelle, was recorded foraging on the slope leading up from the river. Several Daubenton's bats were also recorded feeding over the water of the River Clyde. Given the time the bats were recorded, it is clear that they are roosting nearby although probably not in the vicinity of the plantation. The bats are likely to use the vegetation and trees along the River Clyde as a flightline from roosts elsewhere. As bats were not recorded in great numbers it therefore seems unlikely that a maternity roost is present in the area that will be affected by the new road crossing.

Area 2 – M75 Crossing of the River Clyde

Area 2 centres on the newly constructed M74 bridge which crosses the River Clyde between junctions 5 and 6 in the vicinity of Strathclyde Country Park. The actual bridge is a new iron and concrete structure offering no potential for roosting bats. Either side of the bridge is young broadleaved plantation dominated by sycamore, birch and alder with occasional hawthorn, ash and willow.

It was assessed that no further survey of this area is required. Although the young plantation, scrub and River Clyde constitute good foraging habitat for bats, most likely common and soprano pipistrelle and Daubenton's bats along the watercourse, the trees are not old enough to have developed features of use by roosting bats.

Area 3 – Mature Lime Plantation Adjacent to River Clyde

Area 3 consists of a stand of mature lime trees located on marshy ground between the River Clyde and the M74. Although large trees with big trunks are all in good health, with thin limbs, they did not display features of interest to roosting bats.

It was assessed that no further survey of this area is required. Although the trees and River Clyde constitute good foraging habitat for bats, most likely common and soprano pipistrelle and Daubenton's bats along the watercourse, the trees are too healthy to have developed features of use by roosting bats, although reasonable avoidance measures would be advised if felling takes place in this area.

Area 4 – Semi-Natural Broadleaved Woodland Adjacent to River Clyde

Area 4 consists of young and semi mature broadleaved woodland located on marshy ground between the River Clyde and the M74. Willow, ash and sycamore are dominant with occasional hawthorn and lime.

It was assessed that no further survey of this area is required. Although the areas of woodland, scrub, marshy ground and River Clyde constitute good foraging habitat for bats, most likely common and soprano pipistrelle and Daubenton's bats along the watercourse, the trees are not old enough to have developed features of use by roosting bats.

8 Conclusions and Recommendations

No bat roosts were confirmed during the survey. The dusk and dawn bat activity surveys completed suggest it is likely that bats are present and feeding or moving along the



riparian corridor of the River Clyde but are highly unlikely to be affected by the proposed scheme.

Due to risk that undetected roosts may be present, as a precautionary measure it is recommended that a suite of Reasonable Avoidance Measures (RAMs) be agreed with SNH prior to any tree felling being carried out.

RAMs should include the following:

- All trees scheduled for felling should be inspected by an experienced bat ecologist, and those which contain potential roost features should be marked. All potential roosts should be checked for the presence of bats by a licensed batworker immediately prior to felling the tree.
- All marked trees should be felled during suitable weather conditions in the months of September/October or mid-March to mid-May.
- All sections that contain potential roost features should be soft felled. This should involve wedging open splits or cracks to prevent them from closing and not cutting through cavities. These sections should be roped down to ensure that any hidden bats remain unharmed.
- Felled sections that contain potential roost features should be allowed to remain undisturbed on site or within the adjacent woodland for 48 hours to allow any hidden bats to escape. They should be stored in long lengths to prevent the setting of fires.
- A licensed batworker or experienced bat ecologist should be in attendance during felling operations. If bats are discovered at any time all work must cease. A licence from the Scottish Executive may be needed before work can re-commence – the bat worker will be able to advise following consultation with SNH.

Finally, to provide positive measures for bats in the area, it is proposed that a range of different bat boxes should be installed at suitable locations (in consultation with the Country Park Rangers). These should be installed at various heights (but above the reach of the public), and facing a range of aspects. Monitoring of the bat boxes would be beneficial to assess their success.

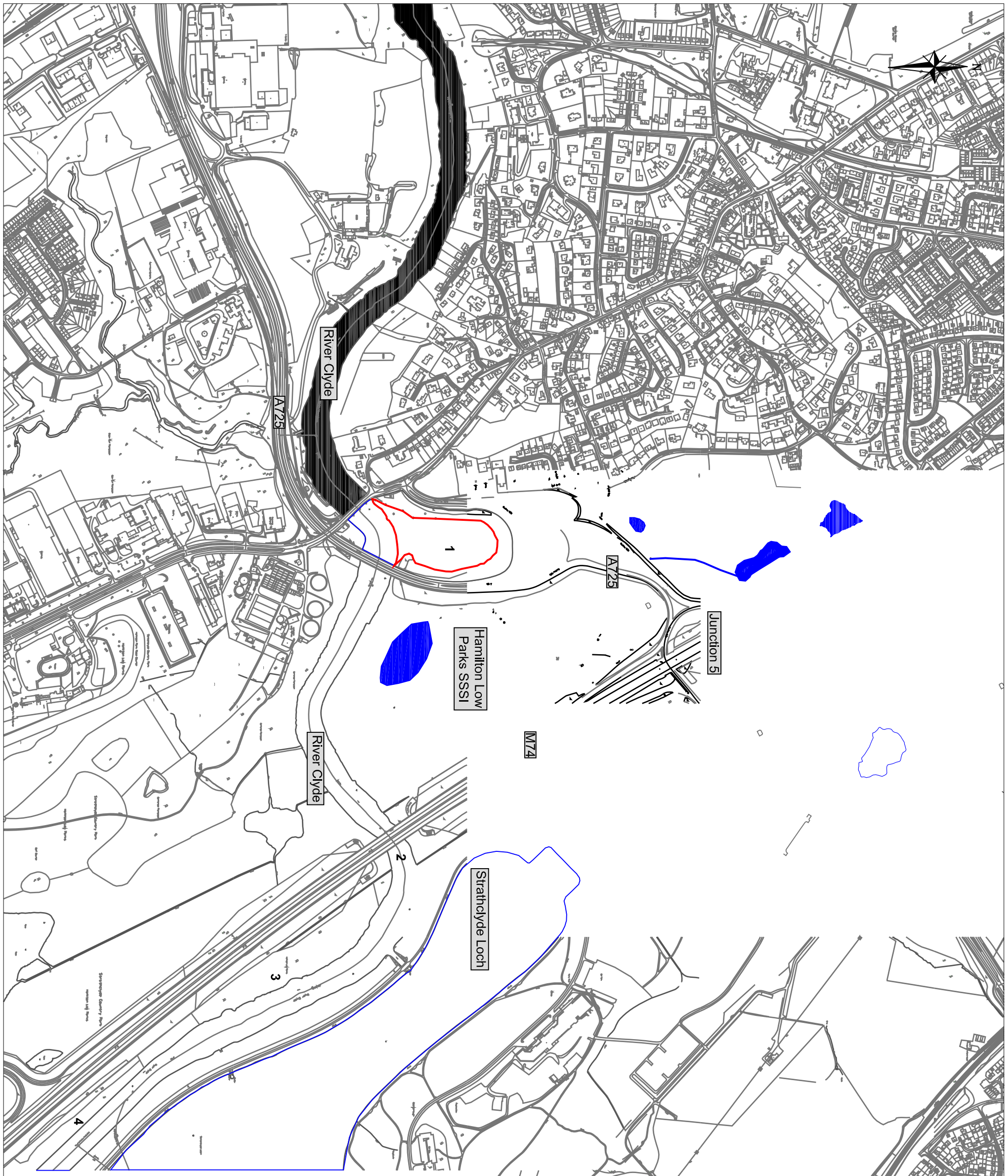



Figure 1

Figure Title:
Areas Assessed and Surveyed
for Bats


Project:
M74 Junction 5, Raithe

Key:

 Dawn and Dusk
Survey Route

 Target Note Number

 Habitat assessed as
containing limited
potential for roosting
bats. Dusk/dawn
survey unnecessary

 Habitat assessed as
containing potential
bat roosts. Dusk/dawn
survey completed

Drawn By	DA
Checked By	AN
Approved By	UM
Date	24/10/2006

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