The results of vegetation surveys at two BaTML bat survey sites on the canal system in central Scotland

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Dated: 1st November 2004

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Abstract

During 2002 vegetation surveys were carried out at two sites on the canal corridor that transects the Central Belt of Scotland. These sites were Fawnspark on the Union Canal and Auchinstarry Basin on the Forth & Clyde Canal. The sites in question were chosen because they already featured for bat monitoring purposes within the BATS & The Millennium Link (BaTML) project and, in addition to this, they had also been selected for preliminary aquatic invertebrate surveys scheduled for the same year.

Key words: bats, millennium, aquatic, invertebrate

Introduction

During 2002 vegetation surveys were carried out at two sites on the canal corridor that transects the Central Belt of Scotland. These sites were Fawnspark on the Union Canal (OS Grid Ref: NT062767) and Auchinstarry Basin on the Forth & Clyde Canal (OS Grid Ref: NS721768). The sites in question were chosen because they already featured for bat monitoring purposes within the BATS & The Millennium Link (BaTML) project (Middleton *et al.*, 2004) and, in addition to this, they had also been selected by BaTML for preliminary aquatic invertebrate surveys (Macadam, 2004) scheduled for the same year.

Methods

As part of our bat survey methodology we had already collected some basic, high level data surrounding the immediate habitat for each site. These surveys were to add to this existing data by identifying to a greater level of detail the major plant and habitat types.

The sites themselves were selected as they differed to each other in that they each lie on different canals and are placed in very different surroundings. Fawnspark is typical of the picturesque and tranquil canal habitat of West Lothian. As such we anticipated that its immediate surroundings would not change significantly as a result of the regeneration of the canal network. On the other hand Auchinstarry Basin, as its name suggests, is a relatively large area of water forming part of the Forth & Clyde Canal, immediately next to the town of Kilsyth (North Lanarkshire). Many changes were taking place at this site as a result of the canal regeneration in the locality. These changes included the clearing of vegetation from the water surface, dredging of the canal bed and improved access/mooring facilities for canal users, along with the supporting infrastructure.

The combination of bat surveys, aquatic invertebrate pilot work and vegetation surveys would allow us to begin to bring a number of useful considerations together.

At each site a survey transect of approximately 200 m was chosen to link in with the exact location of the BaTML bat survey sites. The Fawnspark survey transect was carried out during June 2002 and the Auchinstarry Basin transect in September 2002. During these transects waterside vegetation found alongside the banks and towpath was identified.

Results

Both survey sites showed the diversity of waterside vegetation found along the banks and towpath of the canals. In even the short walk taken along the transect to do these surveys over 30 different species were identified at each site. Wildflowers such as Meadowsweet, Water avens and Willowherbs are commonly found in this damp habitat, and featured at both sites. The results for each site are described as follows.

Fawnspark (OS Grid Ref: NT062767)
Survey Period: June 2002
To the east of Philpstoun on the Union Canal, Fawnspark is bordered on the south side by open

fields of grassland grazing, and on the north side by semi-natural woodland (oak, silver birch, ash, beech, sycamore and horse chestnut). A stone dyke with hawthorn, ash and elm running behind, separates the towpath from the woodland. The area is frequented by both Daubenton's bat and Soprano pipistrelle.

A line of scrubby hawthorn, gorse and elder runs along the off-side banking. A compartment of mixed broadleaved and coniferous woodland runs at right angles along the field edge from Bridge No.37 just outside the survey site. The mid-point of our site is opposite to a large beech tree on the off-side banking. Table 1 summarises the species encountered during the survey period on the canal bank and towpath verge at this site.

Table 1: Species identified at Fawnspark, Union Canal

Canal Banking & Towpath Verge		
Bramble Blackberry	Ground elder	Stitchwort (Lesser)
Cock's foot	Herb Robert	Strawberry (Wild)
Colt's Foot	Horsetail	Thistle (spear)
Cow parsley	Knapweed (Common)	Vetch (Tufted)
Dandelion	Meadowsweet	Water avens
Dock (curled)	Meadow vetchling	Willowherb (Broad-leaved)
Dog rose	Nettle (stinging)	Willowherb (Greater)
False oat-grass	Ox-eye daisy	Willowherb (Rosebay)
Figwort	Plantain (Greater)	Yarrow
Forget-me-not	Red clover	Yorkshire fog
Garlic mustard	Sorrel	
Goosegrass	Speedwell (Germander)	

Auchinstarry Basin (OS Grid Ref: NS721768)
Survey Period: September 2002

Near Kilsyth on the Forth & Clyde Canal, Auchinstarry Basin is a relatively more open site with fields of grassland grazing on the south side, and an area of scrub grassland on the north, between the canal and the River Kelvin. The Forth & Clyde Canal is generally much wider than the Union Canal and the basin area at this site is relatively large and has been recently cleared of surface vegetation. This area currently provides an ideal feeding area for Daubenton's bats.

A traditional hawthorn hedge runs along the towpath and the off-side banking from our survey mid-point eastwards. Ash, willow, birch and elder also feature on the off-side banking. Narrow compartments of woodland follow field lines close to the survey site. Table 2 summarises the species encountered during the survey period on the canal bank and towpath verge at this site.

Table 2: Species identified at Auchinstarry Basin, Forth & Clyde Canal

Canal Banking & Towpath Verge		
Angelica	Fern (Broad Buckler)	Reed Canary-grass
Annual Meadowgrass	Hawthorn	Sycamore
Aster (escape)	Hogweed	Thistle (creeping)
Burdock (Lesser)	Horsetail	Thistle (Common)
Cock's foot	Knapweed (Common)	Tufted Hairgrass
Common Reed	Meadowsweet	Willow (Goat)
Cow parsley	Meadow vetchling	Willowherb (Broad-leaved)
Creeping Buttercup	Nettle (common)	Willowherb (Greater)
Dandelion	Plantain (Greater)	Willowherb (Rosebay)
Dock (curled)	Ragwort (Common)	Yarrow
Dog rose	Raspberry	Yorkshire fog
False oat-grass	Red clover	

Discussion

The diversity of waterside vegetation found at these sites is of interest and must also have a beneficial impact upon insect diversity/abundance. All bat species in the UK feed only upon insects and as such an abundance of such prey is essential.

It must be highlighted that these surveys took place in different seasons. Therefore the different plant species recorded at each site will, in part, be due to different flowering times of the species that may occur. It is recognised that if further surveys of this nature were carried out a more robust methodology would be required whereby more sites were surveyed at the same time of year and/or selected sites were looked at in different seasons. No attempt was made to identify aquatic plants. This is an area of study for future consideration, as the vegetation within the canal itself is related to the water quality and aquatic invertebrates. Many of these invertebrates, in adult form, become flying insects and therefore the potential food of bats.

References

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