A PRELIMINARY SURVEY OF AMPHIBIAN BREEDING HABITATS (PONDS) IN NORTHAMPTON, CENTRAL ENGLAND

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ABSTRACT

As part of a local conservation initiative (the Northampton Pond Project) a preliminary ecological survey of amphibian breeding habitats across Northampton has been undertaken. The survey aims to establish the number and location of publicly accessible ponds and to collect a variety of ecological information, including amphibian distribution. A total of 79 ponds were identified and a sample set of 39 ponds included in a preliminary survey. Amphibian records for Northampton from a variety of sources, including the survey, are presented.

INTRODUCTION

Northampton's ponds and their wildlife, in concert with many other urban areas, continue to face development pressures and suffer, in many cases, from long term management neglect. Ponds are amongst our most diverse habitats often supporting very large numbers of species of both plants and animals. Amongst these may be endangered species such as the Great Crested Newt *(Triturus cristatus)* which is now afforded legal protection, as well as some of our most familiar wild animals (e.g. toads, frogs and dragonflies). Ponds also offer considerable value as educational and recreational resources, particularly in urban areas where they lie in close proximity to many people. In addition to local development pressures facing urban ponds, it has been recognised for a long time that more widespread pervasive environmental factors are contributing to declines in amphibian populations (Halliday 1993). Such factors include pollution from a variety of sources with chronic long-term effects on amphibians (Barnes 1998). As a consequence of these factors and others, there is now an urgent need for detailed ecological survey of all our urban ponds including those still present in Northampton. This, in turn, would allow an evaluation of the status of urban amphibian breeding habitats to be undertaken, to help provide the basis for coherent conservation management. Recognising this situation, the Northampton Pond Project has been established, with the following main objectives:

1. To undertake wildlife surveys of Northampton's ponds and wetlands.

2. To identify ways in which pond habitats and their surroundings can be enhanced to benefit wildlife and people.

3. To initiate and deliver practical work, training and research related to pond ecology and conservation.

4. To involve local people in these activities.

The project aims to demonstrate that a small, local, coherent conservation initiative can help produce valuable conservation benefits. It seeks to achieve this by working in partnership with relevant organisations including Northampton Borough Council, University College Northampton and the Wildlife Trust for Northamptonshire. As part of objective 1, a preliminary survey of ponds was undertaken during 1998 and 1999.

Large data sets for urban ponds are rare, although there are some notable exceptions including a long history of surveys undertaken in Milton Keynes (Barnes and Halliday 1997). It is increasingly recognised that effective conservation measures for amphibian populations and other pond wildlife, needs to be based on the coherent management of pond groups rather than isolated habitats (Barnes and Halliday 1998; Vos and Chardon 1998). Towards this aim, an important initial requirement is the identification of the number, location and status of ponds and other breeding habitats. In due course it is hoped that this will allow a more strategic approach to be adopted in Northampton, in order that the limited resources available for pond wildlife conservation may be effectively targeted.

METHODS

Mapping ponds and collection of extant information

An initial mapping exercise was undertaken to locate ponds and other relevant habitats. This involved careful and systematic examination of appropriate scale maps of the Borough of Northampton (e.g. Ordnance Survey Pathfinder series, 1:25 000). This information was supplemented with local knowledge from a number of sources, including members of the Northampton Wildlife Group, present and previous County Amphibian Recorders, members of the Northamptonshire Natural History Society and the Northamptonshire Wildlife Trust 'Prime Sites' database. Relevant documentary material was also consulted including publications produced by the Northamptonshire Natural History Society (Biley 1984; NNHS 1986) and other relevant organisations, e.g. Northampton Wildlife Strategy (1984). The aim was to ensure that the locations of as many publicly accessible ponds as possible, were identified. These sources were also consulted to collect extant ecological information about the ponds, including amphibian records.

Survey work

A total of 79 publicly accessible ponds, within the Borough, were identified and a sample set of 39 ponds (49.4%) were visited during 1998 and 1999. As many sites as possible were visited during the amphibian breeding season. To help ensure consistency of survey work between sites, a widely used pro-format recording sheet was used (Pond Action 1989) which was originally developed for the National Pond Survey. Use of this pro-format also meant that information collected may be comparable with other surveys across the country, thereby potentially helping to contribute to wider studies. Information concerning the physical character of each pond, its wildlife and the nature of surrounding areas was collected.

RESULTS AND DISCUSSION

Table 1 shows the number of ponds in Northampton with known records for different amphibian species. The number of ponds known to support different species assemblages is shown in Table 2. The results show that four amphibian species are present in the Town, including *Triturus cristatus*. This species and *Bufo bufo* are identified as occurring in less than 10% of ponds. Information available for the other two species

suggests these both occur in less than 25% of ponds. Only one site is identified as supporting all 4 species. On the one hand, the results may under represent the real status of amphibians in Northampton because colonies may have been missed, or overlooked during surveys. On the other hand, the results may over represent the current situation because areas of habitat, including ponds, have been lost over recent years.

The work undertaken confirms that the town still contains a high number of publicly accessible ponds and similar habitats, despite intensive development pressures over recent years. Some of these ponds support one or more amphibian species and further breeding habitat is offered by other ponds located in gardens and other private sites. Unfortunately, many of these sites are effectively isolated from one another, making amphibian (re)colonisation difficult. Moreover, although some individual sites may be considered formally within the planning process (i.e. locally important wildlife sites) there is no local planning policy or strategic management consideration aimed specifically at conserving ponds or the wildlife (including amphibians) which they support (Northampton Borough Council 1997).

Table 1. Number of ponds in Northampton with known records for different amphibian species

Species	Number of ponds	% of total pond set
Bufo bufo	5	6.3
Rana temporaria	18	22.8
Triturus cristatus	4	5.1
Triturus vulgaris	11	13.9

Total number of ponds identified = 79

Table 2. Number of ponds in Northampton supporting different species assemblages

Species assemblage	Number of ponds
Rt only	8
Tc only	2
Tv only	2
Bb and Tv	1
Rt and Bb	3
Rt and Tv	6
Tc and Tv	1
All 4 species	1

CONCLUSIONS AND FUTURE WORK

This research aims to provide a preliminary 'snapshot' of Northampton's pond habitat resources and the amphibian populations which they support. The recent survey sample includes approximately half of the known sites within the Town and information from this survey has been combined with data drawn from a variety of other sources. Although the information is, as yet, incomplete it is hoped that the results will help provide a contribution towards the development of a comprehensive ecological database for Northampton's ponds and that this will, in due course, help underpin effective conservation management for amphibians and other pond wildlife in the Town.

Pressure from new housing and other urban development looks set to continue in Northampton with potentially significant negative impacts on the Town's amphibian populations. Additionally, in the long term, lack of management at many sites may also exert further pressure on amphibian habitats. As a first step to address these damaging trends, a full amphibian survey of all the Northampton's ponds (and other breeding habitats) should, ideally, be undertaken to establish as full a picture as possible of the status of frogs, toads and newts in the Town. Resources for such work are limited but the Northampton Pond Project is working towards this goal for the benefit of amphibians, other pond wildlife and all local people who appreciate these important wildlife assets.

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