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# Ponds in Partnership Phase 1 Final Report: Establishing the Framework for the National Pond Monitoring Network

Science Report E1-115/SR1



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Professor Mike Depledge

Head of Science

## Summary

The Ponds in Partnership project established the framework for the National Pond Monitoring Network (NPMN). The Environment Agency and the Ponds Conservation Trust ran the project jointly from 2002 to 2004. Given that a wide range of organisations fund and carry out pond surveys, the Ponds in Partnership project recognised that the most effective way to co-ordinate surveys and assessments of the UK's ponds is to bring partners together. By the end of 2004 the National Pond Monitoring Network consisted of more than 500 individuals and more than 50 organisations involved in pond survey activity. The Network is now ready to enter its operational phase.

The four major areas of activity during the project were: building the Network, promoting standardised surveys, creating the tools for the Network to operate and working to ensure the long-term sustainability of the initiative.

**Building the Network** involved developing a National Pond Monitoring Strategy, generating publicity for the project and holding partnership meetings.

The Strategy listed the NPMN's six aims. These are to:

- establish a national pond monitoring programme;
- stimulate and co-ordinate additional pond survey activity;
- build up the national pond data centre;
- use the Network for reporting and policy development;
- build up a centre of pond survey expertise;
- promote awareness of the Network and public involvement.

The Strategy also defined the three types of data that the Network will include:

- core monitoring data from a national programme of repeated surveys of representative sites to provide reports on the quality of the UK's ponds;
- targeted survey data from surveys co-ordinated through the Network which address specific questions or focus on particular environmental issues, taxon groups or geographic areas;
- inventory data from as many sites as possible, ranging from name and location information and single species records, to a comprehensive survey of a single site, particularly from ponds of ecological importance.

**Promoting standardised surveys** involved developing and endorsing standard methods, running training courses, co-ordinating and promoting survey activities, working towards an international standard pond survey method and developing new recording standards. Pond survey activities contributing to the Network included studies of single species (e.g. water shrews), Biodiversity Action Plan (BAP) species (e.g. New Forest Ponds), taxon groups (e.g. British Dragonfly Society) and local areas (e.g. Hertfordshire Pond Survey and the Ponds, Pools and Puddles project).

**Creating tools for the operation of the Network** involved developing the National Ponds Database, setting up the project website ([www.pondnetwork.org.uk](http://www.pondnetwork.org.uk)) to give access to the database and pond ecological quality assessments and developing a data management strategy.

**Activities for the long-term sustainability of the initiative** included preparing funding applications, working to influence UK policy and developing proposals for Phase 2 of the Network from 2005 to 2007. Phase 2 will build on the success of Phase 1 activities to implement the aims of the Network as described in the Strategy, in particular to establish a formal monitoring programme for the UK's ponds.

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# **1. Introduction**

## **1.1 Ponds in Partnership Phase 1**

This report describes the results of the initial phase of Ponds in Partnership, a collaborative project between the Environment Agency and the Ponds Conservation Trust: Policy and Research (PCTPR).

Phase 1 of Ponds in Partnership ran from January 2002 to September 2004. Its aim was to establish the infrastructure for a National Pond Monitoring Network (NPMN). Given that many organisations are involved in pond survey activities, the project recognised that the most effective way of co-ordinating surveys and assessments of the UK's ponds was to bring together partners in a National Pond Monitoring Network. This created the infrastructure for organisations and individuals with a range of levels of skills and resources to contribute to the Network, so that the Network could continue as a sustainable initiative.

## **1.2 The Ponds in Partnership team**

The Project Managers were Shelley Howard for the Environment Agency and Jeremy Biggs for The Ponds Conservation Trust: Policy and Research (PCTPR). The Project Officer, Anita Weatherby, was based with PCTPR.

The project board met quarterly and included representatives from the Environment Agency, the Ponds Conservation Trust, Defra, English Nature, the Countryside Council for Wales, the Scottish Environment Protection Agency, the Environment and Heritage Service Northern Ireland and the Herpetological Conservation Trust. A full list of project board members is given in Appendix 1.

## **1.3 Project plan**

The project board agreed the project plan in March 2002. The plan included building the Network, promoting standardised surveys, creating the tools for the Network to operate, and planning the long-term sustainability of the initiative.

Section 2 of this report describes activities to build the Network:

- developing a National Pond Monitoring Strategy;
- generating publicity for the project;
- holding partnership meetings.

Section 3 describes activities to promote standardised surveys:

- promoting standard methods;
- running training courses;
- co-ordinating and promoting survey activities.

Section 4 describes the creation of tools for the operation of the Network:

- developing a National Ponds Database;
- creating the project website to give access to the database and pond ecological quality assessments;
- developing a data management strategy.

Section 5 describes work towards the long-term sustainability of the initiative and Section 6 summarises proposals for Phase 2 of the Network from 2005 to 2007. Finally, Section 7 summarises the outputs of the project to date.

## 2. Building the Network

### 2.1 Introduction

Building the Network involved the following steps:

- developing a National Pond Monitoring Strategy;
- generating publicity for the project;
- holding partnership meetings.

As a result of these activities more than 500 individuals and more than 200 organisations are directly involved with the NPMN; the full list is included in Appendix 2. This list will enable effective communication with partners at every level, for example for mailing of newsletters and reports.

### 2.2 The National Pond Monitoring Strategy

#### 2.2.1 Overview

The NPMN Strategy describes the need for the Network and its aims. It gives details of the importance of ponds for biodiversity, current threats, the responsibilities of UK statutory bodies and the benefits of a co-ordinated partnership approach to pond monitoring.

The NPMN Strategy document was published in June 2003. It is included as Appendix 3 and can be obtained as a stand-alone document from the Ponds Conservation Trust (*The National Pond Monitoring Network: a strategy for pond monitoring, surveillance and inventory development, Environment Agency and Ponds Conservation Trust 2003*).

The Strategy was prepared in consultation with project partners and the Project Board. Advice was taken from Ponds Conservation Trust staff with expertise in running national surveys (e.g. National Pond Survey, Lowland Pond Survey 1996) and from Environment Agency experts on the statistical power of datasets.

Five hundred copies were printed. To date more than three hundred of these have been distributed to relevant parties, including a copy for every Environment Agency Ecology and Conservation Team and a copy for every English Nature Area Team office.

#### 2.2.2 Aims

The Strategy lists the following six aims for the Network.

1. To establish a programme of monitoring to assess the current status of ponds in the UK, particularly their ecological quality and biodiversity value, and to identify trends over time.
2. To stimulate and co-ordinate additional pond survey activity through targeted surveys and by developing an inventory of pond locations and associated data. Targeted surveys will address issues which arise from monitoring, or focus on particular species or geographic locations.
3. To create a UK focus for pond survey data by bringing together the datasets generated by the activities described above, and by collating existing datasets. The database created will be publicly accessible via the project website.
4. To use the data collected to report on the state of the UK's ponds and feed into policy development to protect the habitat, with associated biodiversity and quality of life benefits.



5. To create a UK centre of pond survey expertise, through collaboration with partners, which will encourage standardisation and co-ordination, promote standard survey methods and provide technical support, training and quality assurance.
6. To promote public awareness of, and involvement in, pond conservation through pond surveys by volunteers, and through using the project website to contribute to the pond inventory and to find out about local ponds, with associated social and educational benefits.

### **2.2.3 Definitions of data types for the Network**

The Strategy defines the three types of data that the NPMN will include:

- core monitoring data from a national programme of repeated surveys of representative sites to provide reports on the quality of the UK's ponds;
- targeted survey data from surveys co-ordinated through the NPMN which address specific questions or focus on particular environmental issues, taxon groups or geographic areas;
- inventory data from as many sites as possible, which could consist of name and location data, single species records, or a comprehensive survey of a single site.

## **2.3 Publicity**

### **2.3.1 Overview**

Publicity was essential so that all individuals and organisations involved in pond survey activity were aware of the National Pond Monitoring Network and its aims.

Leaflets about the Network were widely distributed and made available via the project website. The most recent version is included in Appendix 4. A high profile launch event was held in May 2004. Opportunities for publicity were taken as they arose. These included presentations, posters, workshops and articles for publication.

### **2.3.2 Launch event**

More than 80 people representing more than 40 different organisations attended the launch event in London in May 2004 in a venue provided by Defra.

Barbara Young, Chief Executive of the Environment Agency, introduced the event and called on fellow 'conspirators' to recognise the value of ponds and support collection and collation of standardised pond data.

Chris Mills, Head of Wildlife, Recreation and Marine for the Environment Agency chaired the day and gave his support to the future of the project.

Speakers from the Ponds Conservation Trust presented new data on the importance of ponds for biodiversity, described how the Network currently works and plans for the future, and demonstrated the National Ponds Database and website.

The event was successful in building support for the Network. A number of funding leads and partnership meetings resulted from it.

Figure 1 shows photos of the event. Full details of the day are given in Appendix 5 including the agenda, a list of attendees, and the press release issued.



Figure 1: The NPMN launch event

### 2.3.3 Publicity opportunities

See Appendix 6 for a full list of publicity opportunities taken.

Presentations were given at 13 different events, often to large audiences e.g. the Herpetofauna Workers annual meeting in Edinburgh in February 2003 and the Buckinghamshire Recorders Annual Meeting in April 2004.

Posters were displayed at five events including the National Federation of Biological Recorders conference on 'Sampling and Sampling Strategies' in Winchester in March 2002, the Symposium for European Freshwater Sciences in Edinburgh in July 2003 and the Environment Agency Biodiversity Seminar in Birmingham in November 2003.

Stands were run at four events, including the England Biodiversity Exchange Fair in Sheffield in March 2004 and the National Biodiversity Network (NBN) Gateway Launch in London in June 2004.

Information about the Network was included in six publications including The British Dragonfly Society's *Dragonfly News* and *Freshwater Biological Association News* in April 2004 and a full page spread in the NBN Annual Report for 2003-2004 in August 2004.

## 2.4 Partnerships

### 2.4.1 Overview

The NPMN Strategy document identified more than 40 potential partners. These included organisations, projects and types of organisation (e.g. Biodiversity Action Plan (BAP) steering groups, Local Record Centres, environmental consultants).

Discussions were held with representatives of most of these groups, and 33 have been actively involved in Network activities.

Organisations are involved in a variety of ways. Examples of activities are given below.

- Making a commitment to contribute new data to the Network. For example British Waterways have agreed to use standard methods for pond surveys where appropriate, and to donate all data collected to the Network.
- Providing funding support. The Environment Agency funded Phase 1 and has been positive about supporting core activities for Phase 2.
- Co-ordinating data collation projects. For example, Hampshire and Isle of Wight Wildlife Trust took the co-ordination role in the New Forest Ponds project, collated data from a variety of sources and made it available to the Network in a digital format.
- Working on active data collection projects. For example, representatives of the Freshwater Biological Association became the point of contact for the Network for the Cumbria Tarns project. This involved both the digitisation and quality assurance of existing high quality datasets on tarns in Cumbria and working with Cumbria Wildlife Trust to co-ordinate volunteers in repeat surveys of these sites.
- Bringing new volunteers to biological data collection. The Mammal Society, for example, is recruiting and co-ordinating volunteers in surveying all types of freshwater habitats for water voles and is including ponds for which the Network holds comprehensive records.
- Obtaining data from members. The British Dragonfly Society worked with the Network to develop a recording form for Odonata in ponds, which was then sent to all 1,600 of its members.
- Applying for funding for joint projects. For example, Kent and Medway Biological Record Centre has submitted a proposal for European Union funding which includes funding for pond surveys and training of surveyors.
- Interest in future joint projects. Opportunities for joint projects have been discussed with the Bat Conservation Trust as part of the UK's National Bat Monitoring Programme, and these will be developed in Phase 2.

Further details are included in the full list of individuals and organisations involved in the Network in Appendix 2.

### 3. Promoting standardised surveys

#### 3.1 Introduction

Promoting standardised surveys involved:

- promoting standard methods;
- running training courses;
- co-ordinating and promoting survey activities.

#### 3.2 Promoting standard methods

##### 3.2.1 Overview

Three pond survey and assessment methods were promoted as national standards:

- the National Pond Survey method (Biggs *et al.* 1998);
- the Predictive SYstem for Multimetrics (PSYM) assessment system developed by the Environment Agency and the Ponds Conservation Trust (see 3.2.2);
- a new ‘pond inventory’ recording form developed for the Network during this project.

These provided appropriate methods for surveyors with various levels of experience and taxonomic expertise.

The same biological survey method is used for the National Pond Survey and for PSYM. This method is being taken forward as an international standard with representatives of the European Committee for Standardisation (*Comité Européen de Normalisation, CEN*).

##### 3.2.2 Background to PSYM

The Predictive SYstem for Multimetrics (PSYM, pronounced ‘sim’) was developed by the Environment Agency and the Ponds Conservation Trust (PCT) to provide a standard method of assessing the ecological quality of ponds in a national context. (Environment Agency R&D Technical Reports: Williams *et al.* (1996), Williams *et al.* (1998), Biggs *et al.* (2000)).

PSYM combines the predictive approach of RIVPACS<sup>1</sup> with multimetric-based methods used for ecological quality assessment, and uses both macrophyte and macroinvertebrate data. The PSYM method directly parallels the approach defined in the EC Water Framework Directive. This requires i) comparisons with minimally impacted baseline conditions, and ii) assessments to be based on multiple parameters related to degradation.

To obtain a PSYM assessment a surveyor needs to carry out a standard pond survey following the method given in the PSYM manual (Pond Action 2000). This involves collecting 13 environmental measures, identifying the macrophyte species at a site and the macroinvertebrate families collected in a three-minute sample. Metrics calculated from this dataset are entered into the PSYM model. The model compares these metrics to predictions for a minimally impacted site with those environmental characteristics to produce a percentage score for ecological quality.

Ideally, the method uses both macrophyte and macroinvertebrate data, but the model can be run using just one of these. PSYM is currently applicable to data collected using the standard

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<sup>1</sup> RIVPACS is the River InVertebrate Prediction and Classification System, developed by the Institute of Freshwater Ecology and the Environment Agency (Wright *et al.* 1984, Wright 1995).

survey method during June, July and August from ponds and small lakes of up to five hectares in England and Wales. Plans to add to the model reference dataset will enable assessments to be undertaken in other seasons in future.

### **3.2.3 Review of PSYM manual**

The PSYM manual was improved with minor clarifications during 2003. The PCT withdrew the £5 charge made to cover administrative costs of preparation and postage and now distributes the manual free of charge. The manual can also now be downloaded from the project website at [www.pondnetwork.org.uk](http://www.pondnetwork.org.uk). A copy of the PSYM fieldsheet is included in Appendix 7.

### **3.2.4 Availability of PSYM model**

At the start of the project the PSYM model was not directly available to surveyors. In order to get a PSYM result, a user had to send data to the Project Officer, who ran the data through the model and sent the result to the user.

During 2003, PCT and Environment Agency staff developed a more user-friendly version of the PSYM computer model. This was distributed to all Environment Agency Ecological Appraisal team leaders, along with the user manual and information about the Ponds in Partnership project and training.

The PSYM model was made available through the project website in May 2004.

### **3.2.5 British and international standards for pond survey methods**

The feasibility of extending use of the PSYM system internationally by developing international standards was discussed with members of working groups of the European Committee for Standardization (CEN), in particular with Roger Sweeting of the Freshwater Biological Association. While the method of developing the multimetric system did not lend itself easily to the development of a standard, the biological survey method itself (which is the same for both PSYM and the National Pond Survey method) is applicable to any small standing waterbody.

A paper describing the PSYM method was prepared for Roger Sweeting to take to the CEN working group meeting (CEN/TC230/WG2 Biological and ecological assessment methods) in February 2003. A draft standard is now being prepared for consideration by the CEN working group.

Acceptance as a European standard would also give the method a British Standard rating.

### **3.2.6 Inventory and Odonata recording forms**

Discussions with partner organisations identified the need for a further national standard method for collecting data describing the physical pond habitat. This was developed to meet three specific needs:

- for surveyors without expert biological identification knowledge to contribute to the Network;
- to meet the needs of the inventory and provide useful information on a site;
- to link with specific taxon-based recording.

To develop the form, the Project Officer examined the content of eleven different survey forms. The results of the National Pond Survey, which collected a comprehensive range of environmental variables, were taken into account in deciding which variables could be correctly recorded and which provided useful information on a site. Discussions were held with experienced pond surveyors, and the draft form was discussed at a workshop with volunteer recorders and staff who work with them.

The pond inventory form is given in Appendix 8; it has been widely distributed and completed forms are being returned at an increasing rate.

Following discussions with the Dragonfly Conservation Group, the British Dragonfly Society (BDS) developed a form to record Odonata use of ponds (Appendix 9). This was printed with the NPMN inventory form on the back and distributed to 1600 BDS members in April 2004.

The inventory survey form will be used as the basis for public involvement surveys in Phase 2 as described in Section 6.

### **3.3 Training courses**

#### **3.3.1 Standard PSYM training courses**

Four PSYM training days were held in July and August 2003 in Oxford, Newcastle, Warrington and the New Forest. These courses were oversubscribed, so two extra dates were added in September 2003 in Oxford. In 2004 two more standard format training days were held in Oxford.

In total, more than 100 people attended these courses representing more than 40 organisations. Details of the training course dates, locations, numbers of attendees and contents of the training pack are given in Appendix 10.

The standard format training course included:

- an introduction to the Network;
- a description of the PSYM and National Pond Survey standard survey method for surveys of plants and invertebrates in ponds, with discussion of their strengths and limitations and their application in assessing pond conservation value and ecological quality;
- a practical demonstration of the PSYM survey method in the field;
- an opportunity for attendees to carry out a shortened version of the survey themselves;
- a demonstration of PSYM analysis based on a full survey of the site visited.

#### **3.3.2 Development of future training courses**

Feedback forms completed by training course attendees were generally very positive. Minor changes were made to the courses between 2003 and 2004. One limitation to attendees' future use of the survey method was their expertise in plant and / or invertebrate identification. Accreditation of the ability of each surveyor will be needed if data collected by many surveyors is used to assess the quality of the UK's ponds.

Two further training days were carried out with the aim of exploring different approaches in PSYM training.

One training day was tailored to meet the needs of a particular organisation by focusing on hands-on use of the PSYM method and model. The amount of background material covered

was reduced and a session of invertebrate identification was included. The course was attended by 12 staff from the Buckinghamshire, Berkshire and Oxfordshire Wildlife Trust, and was held in Oxfordshire in May 2004. NPMN staff who delivered the course felt the amount of content covered matched the time available more successfully than the standard course.

The second experimental training day was a 'Training the Trainers' course held for Royal Society for the Protection of Birds (RSPB) field teachers based at Rye Meads Nature Reserve, Hertfordshire in August 2004. The field teachers previously used an assessment based on invertebrate tolerance of organic pollution with GCSE and A-level students who visit the reserve. They were keen to be involved with a national initiative and, after demonstrations of the method, they were able to adapt it to pass on to students. They also planned to create a teacher's pack with follow-up tasks after the field visit, including use of the project website and addition of school pond data to the National Ponds Database. This was a very useful and informative day and will provide the basis for a future educational component for the Network as described in Phase 2 plans in Section 6.

### **3.4 Co-ordinating and promoting survey activities**

The project officer provided a point of contact for individuals and organisations planning survey activities. She set up meetings with survey organisers to discuss their plans with the intention of promoting the use of standard methods, obtaining data for the National Ponds Database and establishing new partnerships for the Network.

Numerous contacts and sources of data for the Network were made in this way. These are included in the contact list in Appendix 2.

Ongoing work is involved in supporting and advising on a variety of projects. They include those building on pre-existing datasets (e.g. the Cumbria Tarns project co-ordinated by Cumbria Wildlife Trust), working with children (e.g. the Wildfowl & Wetlands Trust Great Pond Safari) and planning for future survey work (e.g. The Herpetological Conservation Trust's work on proposals for a National Amphibian and Reptile Recording Scheme).

The following sections describe examples of projects run in partnership with the Network.

#### **3.4.1 Ponds Pools and Puddles!**

The Ponds, Pools and Puddles! project is run by Buckinghamshire County Council with support from the Landfill Tax Credit Scheme from Nationwide Ltd and Shanksfirst. The project runs from 2003-2005 and aims to include 43 parishes in Northwest Buckinghamshire. It works with community groups to increase knowledge, identify sites of high conservation value and contribute to local Biodiversity Action Plans. To date, volunteers have surveyed 46 ponds. Surveys included an environmental assessment and recording of surrounding land use. 10 of these sites will be surveyed by project staff using the PSYM method.

#### **3.4.2 New Forest Ponds Project**

The New Forest Ponds Project has been a pilot project for data collation and partnership involvement during Phase 1. The New Forest is a particularly important area for high quality ponds in the UK and is home to a number of species of conservation concern. The project has been led by the NPMN and the Hampshire and Isle of Wight Wildlife Trust. It has involved many interest groups involved in recording or management in the New Forest including Hampshire Biological Information Centre. To date, data on all BAP species has been collated



from various sources, digitised where necessary and added to the National Ponds Database. This will enable identification of priorities for volunteer surveying in Phase 2 (Section 6).

### 3.4.3 The Mammal Society Water Shrew Survey

The Mammal Society is undertaking a national survey of water shrews. The NPMN has provided location information for 500 pond sites for which the National Ponds Database holds full environmental, macrophyte and macroinvertebrate survey data. Volunteers will leave baited plastic tubes in a variety of habitat types at each site and send any tubes in which faeces are left to a central lab for identification. The NPMN data will help interpret the water shrew findings and the water shrew data will add to the National Ponds Database.

### 3.4.4 Hertfordshire Pond Survey

In 1986 Hertfordshire County Council carried out the Hertfordshire Pond Survey. This included surveys of plant species, invertebrate groups and environmental variables for 730 ponds. In 2004, Hertfordshire Biological Records centre carried out a repeat survey of 45 sites which also included a PSYM assessment. As well as adding to the National Ponds Database, three local newspapers covered the project, providing publicity for the NPMN (see Figure 2 below).

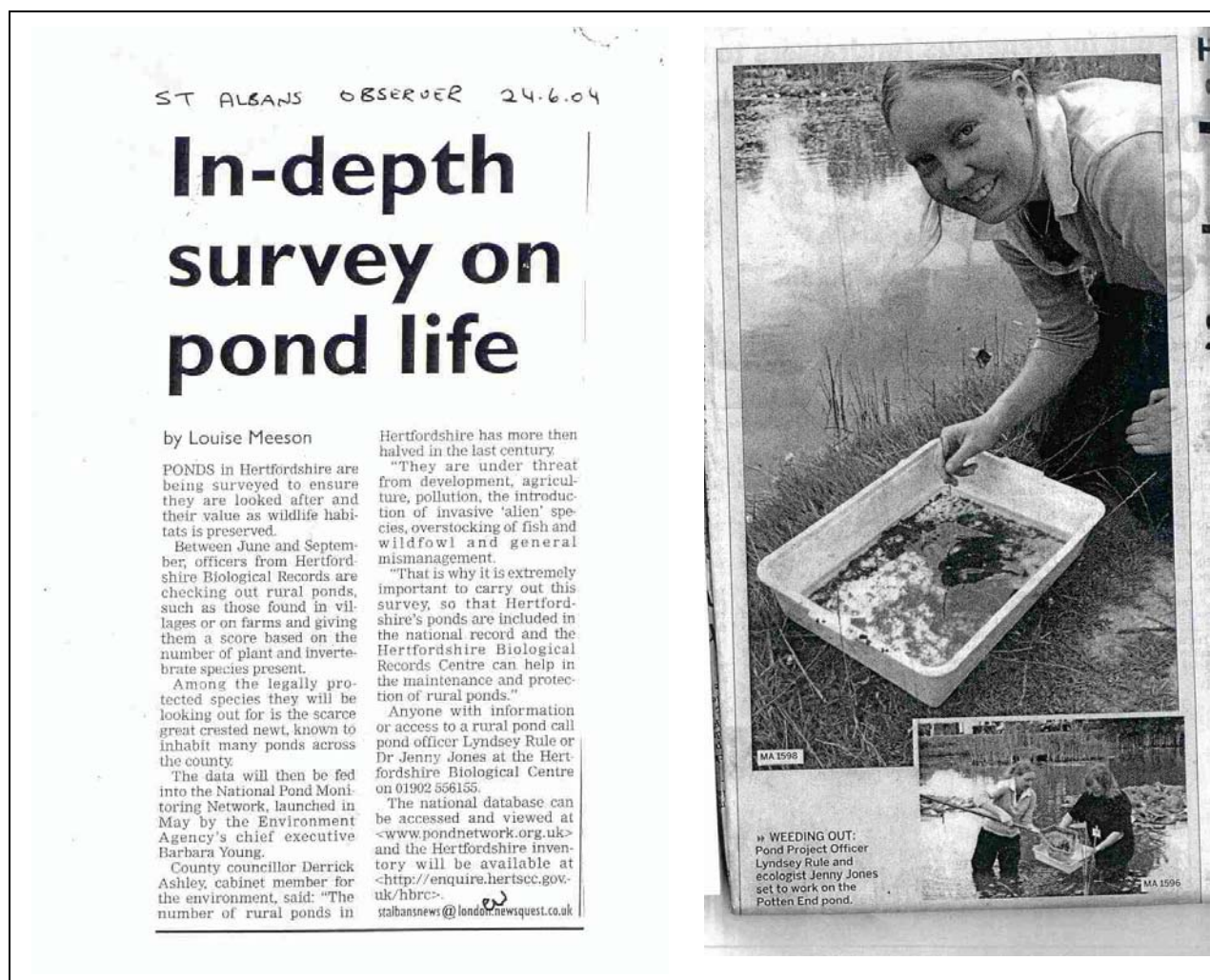


Figure 2: Local press coverage of the 2004 Hertfordshire Pond Survey



## **4. Creating the tools for the Network**

### **4.1 Introduction**

Creating the tools for the Network to operate involved:

- developing a National Ponds Database;
- creating the project website to give access to the database and pond ecological quality assessment;
- developing a data management strategy.

### **4.2 Development of the National Ponds Database and website**

#### **4.2.1 Development process**

The National Ponds Database is the data management tool for the National Pond Monitoring Network. It stores and retrieves pond survey data and makes data publicly available through the internet.

The functional specification for the National Ponds Database and website was drafted following consultation with pond survey experts, partners in the project and the Project Board, which included a representative from the Environment Agency Corporate Information Service. A final version of the functional specification was sent out to tender in December 2002.

Blue-Bag Ltd was successful in its tender application and produced a technical specification including a review of existing datasets and addressing issues of taxon lists and mapping of data fields. In October 2003 Blue-Bag withdrew from the project citing other time commitments.

The second tender process was based on the technical specification and exeGesIS SDM Ltd started development in December 2003. Initial versions of the database and website were operational for the project launch in May 2004. Further testing and development followed, and an internet mapping facility was added in September 2004.

To maximise compatibility, representatives of other relevant systems were consulted during development, particularly Andy Brewer, Technical Liaison Officer for The National Biodiversity Network (NBN) Gateway, and Kearon McNicol of FreshwaterLife.

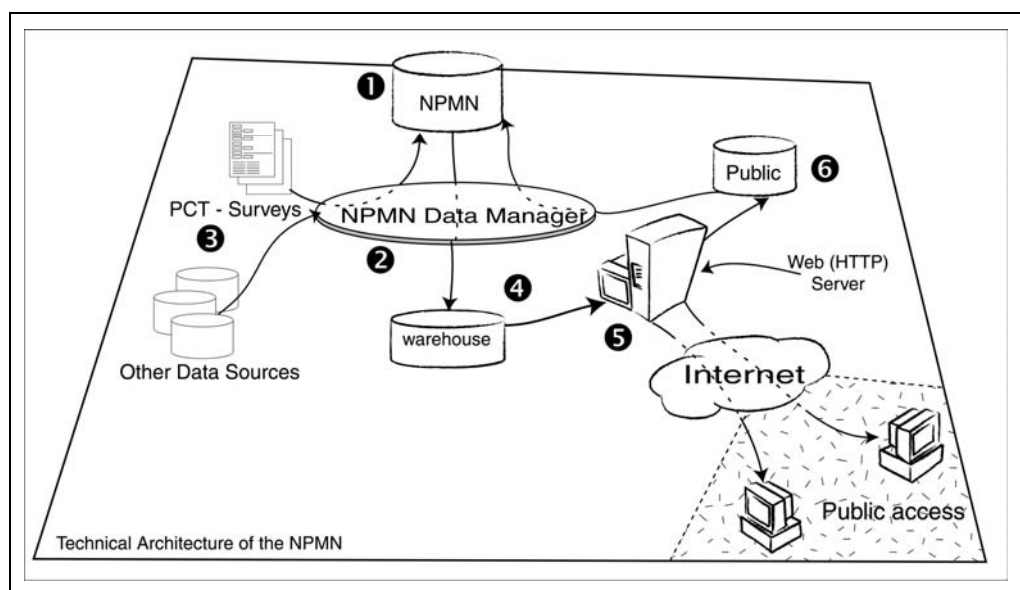
John Tweddle of the NBN Species Dictionary project at the Natural History Museum helped develop the taxon dictionary. The database includes a standard NBN taxon key for every species of freshwater macroinvertebrate and macrophyte as well as birds, mammals, amphibians and fish.

Where possible the terminology, fields and units used were based on international standards. Where these were not available, standards developed by The Pond Conservation Trust's pond survey experts were used.

Standard technologies were used to enable future development of the system. The data manager for the National Ponds Database uses MSDE (Microsoft Desktop Engine), while the website uses an SQL server database using ASP.NET web pages.

#### 4.2.2 Technical architecture of the National Ponds Database and website

Figure 3 below shows the technical architecture of the National Ponds Database and website.



*Figure 3: Technical architecture of the NPMN data management system.*

The core database and data manager run on a computer at the Ponds Conservation Trust's offices in Oxford. The website is hosted through exeGesIS and can be accessed at [www.pondnetwork.org.uk](http://www.pondnetwork.org.uk).

Figure 3 illustrates the major functions of the application. All interaction with the core database (1) is via the data manager tool (2). Data can be added to the database via three routes: raw data can be typed directly into the data manager tool, digital files in the required format can be imported via the data manager tool (3), or PSYM and pond inventory datasets can be added via the website (5). The process of addition of data from the website is not entirely automatic; data received from remote users goes to a holding bay (6) and an operator is required to accept, edit or reject each data set to enable quality control. Datasets that data providers have approved as suitable for being made publicly available are exported via the data manager to a data warehouse (4), which is made available to remote users via the internet.

## 4.2.3 The Data Manager tool

Figure 4 below shows a screenshot of the data manager tool through which the operator interacts with the database.

The screenshot displays the NPNM Database Facility interface for editing the 'Asham Meads' pond record. The left sidebar shows a tree view of the database structure, with 'Asham Meads' selected. The main form is divided into several sections:

- Pond Details:** Includes fields for Site Name (Asham Meads), Secondary Code, County (Oxfordshire), Other Names, Source of grid ref (OS 1:25000), Altitude (m) (60), Source of name (Local Knowledge), 100 km grid square (SP), Grid Ref (SP595135), Nearest Town (Murrcott), Pond Age (3 = 101-1000 Years), Site minimally impaired (No), NPS Compatible biological data (Yes), Survey (NPS), Survey Date (14 June 1997), Survey Type (Invert), Plant Surveyor, Invert Surveyor, and Chemistry Surveyor.
- Pond Size:** Includes fields for Pond Area (m²) (191), Water Area (m²) (108), Max Width (m) (4.4), Max Length (m) (36.5), Marginal Complexity (2 = 10% greater length of ma), and Permanence (3 = Sometimes).
- Seasonal water level fluctuation and permanence:** Includes fields for Drawdown Height (cm) (8) and Permanence (3 = Sometimes).
- Overhanging trees & shrubs:** Includes fields for Pond Overhung % (20), Total Pond Margin Overhung % (46), Water Overhung % (20), and Water Margin Overhung % (40).
- Pond Images:** A large empty box for uploading images.

Figure 4: The National Ponds Database data manager interface

#### 4.2.4 Website functions

Figure 5 shows the website's homepage. The website has four main functions. It enables remote users to access the National Ponds Database to view data, to add PSYM and pond inventory data, to obtain a PSYM score for data entered and to obtain information about the Network. Users can find a pond site by name, grid reference or through the mapping facility, which uses vice county boundaries and the Ordnance Survey 1:250,000 layer as backdrops. The mapping facility is shown in Figures 6 and 7. Users can then view a species list and, if available, a PSYM score for that site. The location of a site can be confirmed through a link to the multimap website.

The website also allows remote users to find information about the Network, to download methods manuals and to find news, reports, contact details and information on training courses.

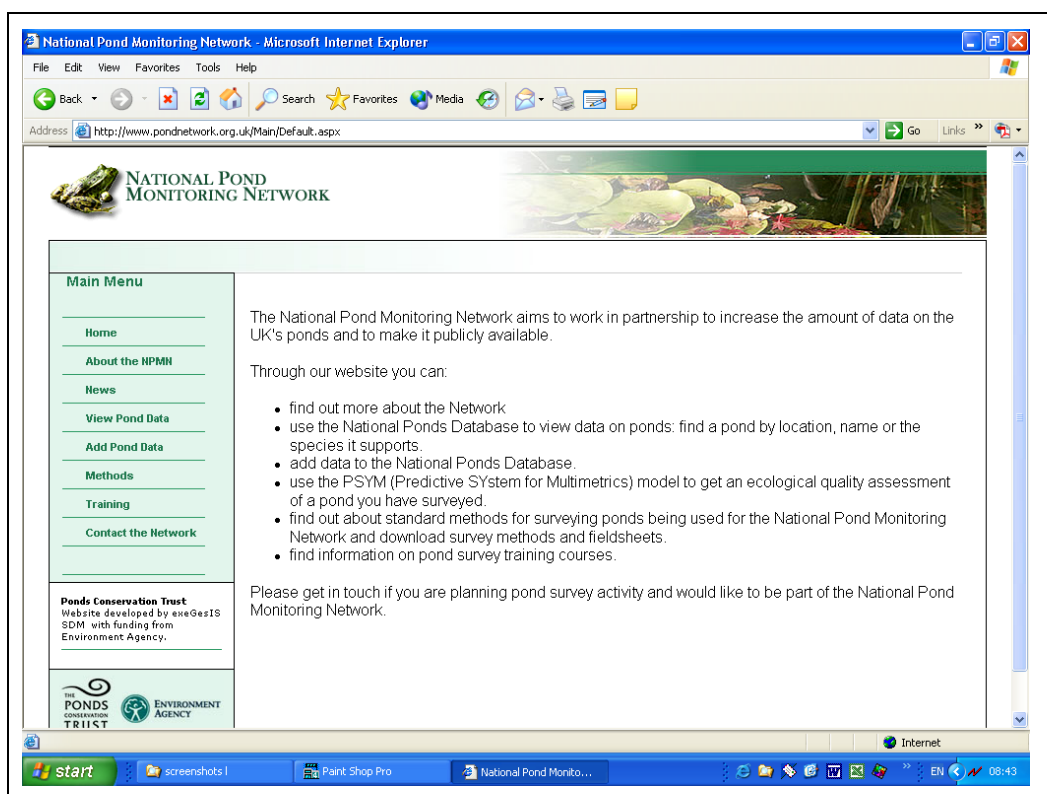


Figure 5: The homepage of the NPMN website

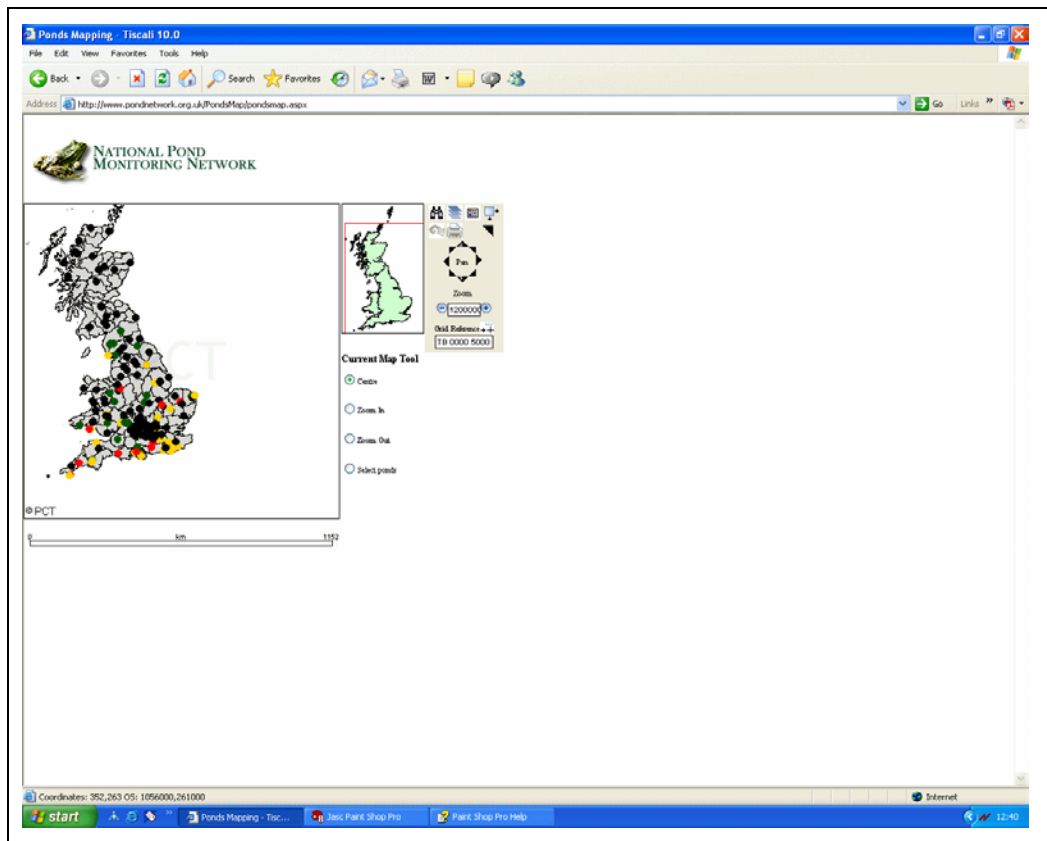


Figure 6: The mapping interface of the NPMN website

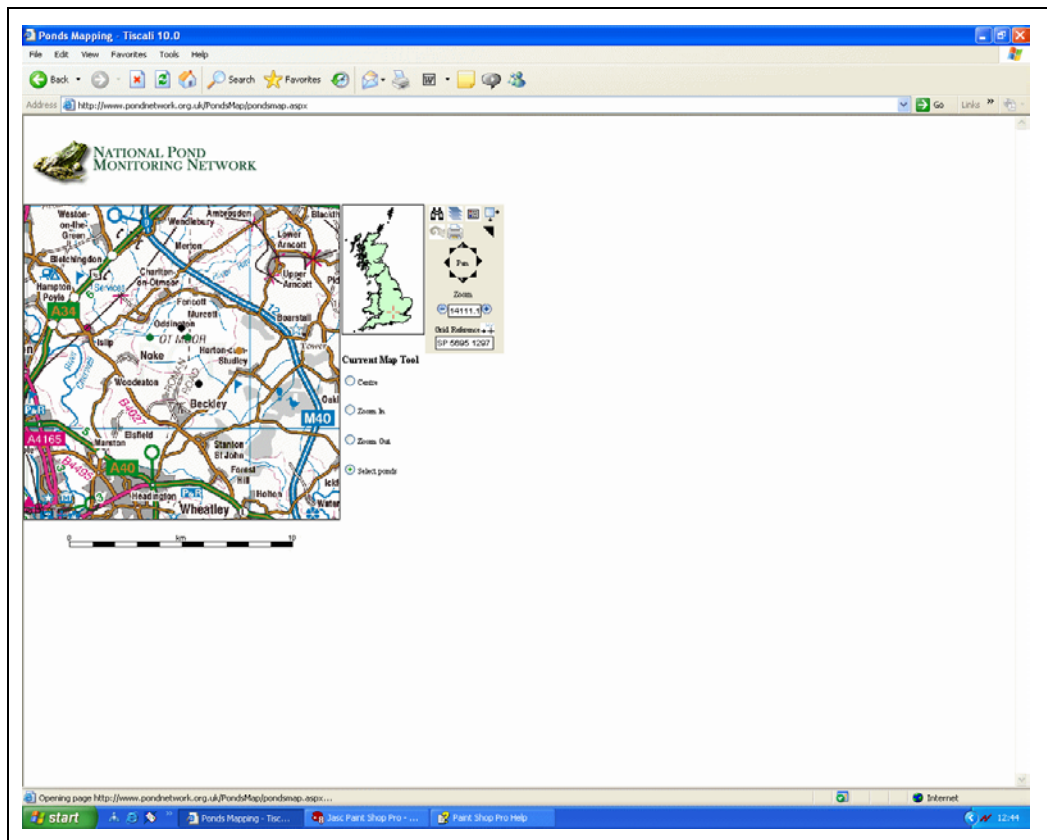


Figure 7: The mapping interface of the NPMN website

## **4.3 Data management strategy**

### **4.3.1 Development**

The data management strategy covers the process of data exchange so that datasets belonging to partner organisations can be added to the database.

A system of recording information on new or newly discovered datasets, and of survey activity planned and underway was developed. The steps involved are to find a contact for the dataset, obtain authorisation for its use, obtain metadata and obtain the dataset in a suitable format for import into the database. New survey partners will be encouraged to plan to provide this information before survey activity starts.

### **4.3.2 Metadata**

The metadata required for each dataset covers the following:

- surveyor details;
- date or date range of collection;
- geographic range;
- method used;
- identity of the data owner (subject to issues in 4.3.3);
- permission given to use the dataset (see section 4.3.3);
- permission given to make the dataset public;
- assessment of the quality of the data (see section 4.3.4).

In addition, when the dataset is obtained, an assessment is made of the degree of effort required to get the dataset into the database based on the format of the data: does it require digitisation, transformation or mapping of species identities?

### **4.3.3 Data Access Policy**

A data access policy was developed to cover ownership and access issues relating to data included in the National Ponds Database.

There are a number of areas of legislation relevant to these issues, particularly the Data Protection Act, Copyright law, the Environmental Information Regulations and the Freedom of Information Act.

Guidance from the National Biodiversity Network (NBN) on data access was extremely valuable. The NBN 'Seven Data Exchange Principles' were followed where possible. Advice was taken from Chris Jarvis, the Environment Agency Public Access Policy Manager on the draft Environmental Information Regulations in September 2002. The regulations will allow public access to all environmental data held by public bodies such as the Environment Agency except where the information is environmentally sensitive (e.g. vulnerable species) or confidential for commercial reasons.

In the light of this, the project board decided that the data access policy would be for open access wherever possible.

An exception will be made at the request of the data provider for datasets that the data provider believes to be environmentally or commercially sensitive. These can be included in the National Ponds Database but will not be made public.

A standard data access agreement has been produced (Appendix 11), though this may be adapted to meet particular needs of data providers. The agreement requests the permission of the data provider to hold information about them and gives options for making that information and the dataset public.

#### **4.3.4 Data collation**

A large number of pond survey datasets already existed at the start of the project. A NPMN study funded through Defra and the National Biodiversity Network explored the extent and value of the pre-existing datasets. It published its findings in 'Developing and testing a targeted approach to biodiversity data management using ponds as a case study' (Ponds Conservation Trust 2004). The report's summary is given in Appendix 12.

The report listed more than 250 known datasets that contain data suitable for addition to the National Ponds Database. It assessed the quality, relevance to the National Ponds Database and accessibility of 40 of these datasets. These datasets have now been prioritised for inclusion in the database based on the outcome of the assessment.

#### **4.3.5 Case Study: Use of the National Ponds Database**

While the National Ponds Database was being developed, English Nature needed a list of 'standing waters of biodiversity significance' to feed into the discussion process for implementation of the EC Water Framework Directive. This is exactly the type of information the National Pond Monitoring Network is collecting.

Although the National Ponds Database was not yet fully functional, by using datasets that were already held and contacting individuals and organisations who held other relevant datasets, the Ponds Conservation Trust was able to collate a list of nearly 600 sites for English Nature. The list is included in Appendix 13. Once the National Ponds Database is fully populated, requests for this type of data will be easy to meet.

#### **4.3.6 Quality control**

Data included within the National Ponds Database is assessed according to the quality control procedure used.

The type of quality control that is appropriate for a dataset depends on the type of data collected. Where comprehensive surveys of macrophyte or macroinvertebrate species are included, appropriate quality control will include: the surveyor's training and experience, the use of standard methods and internal checking systems (such as double-checking five per cent of invertebrate sorting, confirming identification with national experts and resurveying sites). If quality control procedures of this type are in place, as is the case for datasets originating with the Ponds Conservation Trust or the Environment Agency, then the datasets are recorded as being of high confidence in the data quality. Where these procedures are not evident, or a surveyor is unknown and has not attended a training course, the data is marked as being of uncertain quality.

Where less comprehensive surveys are carried out, the level of confidence in the identification abilities of the surveyor is used to give a quality assessment to the dataset.

## **5. The long term sustainability of the initiative**

### **5.1 Introduction**

The National Pond Monitoring Network is a long-term initiative that is now entering the operational phase. During Phase 1, there were three major areas of activity to ensure the successful continuation of the project:

- bids for funding Network activities were submitted;
- the importance of ponds for biodiversity was demonstrated in order to influence areas of UK policy which could result in pond surveys being carried out;
- detailed proposals for Phase 2 of the project were prepared. These are included as Section 6 of this report, and a stand alone document 'Proposals for Phase 2 of the National Pond Monitoring Network' is available from the Ponds Conservation Trust.

### **5.2 Funding applications made during Phase 1**

Nine funding applications were submitted during Phase 1, mainly to statutory bodies. Two of these were funded, two were included in lists to receive support if funds become available, three were not funded and two have yet to be decided. A full list is given in Appendix 14.

Two applications were made to the Environment Agency Monitoring Group for the monitoring of ponds, but these were rejected because of the demands of the Water Framework Directive.

The first successful application was for the Defra / National Biodiversity Network funded project in September 2003, to assess habitat based biodiversity data management (summary in Appendix 12). The second was for the project for English Nature in February 2004, to prepare a list of small waters of biodiversity significance for the process of Water Framework Directive implementation (sites listed in Appendix 13).

### **5.3 UK policy**

A number of areas of UK policy development have implications for pond survey activity. The significance of ponds has been promoted in three main areas during Phase 1:

- the proposal for ponds of high ecological quality to be recognised a priority habitat under the UK Biodiversity Action Plan;
- transposition into UK legislation of the EC Water Framework Directive;
- review of Defra's agri-environment schemes.

#### **5.3.1 The Pond Habitat Action Plan**

In 2002, the UK Biodiversity Partnership accepted the scientific case for recognition of ponds of high ecological quality as a priority habitat under the UK Biodiversity Action Plan. However, the Standing Committee decided to postpone the addition of any new Habitat Action Plans (HAPs) until after a review in 2005. The Ponds Conservation Trust has prepared a draft HAP for ponds (Appendix 15), and is actively working for its implementation. The National Ponds Database will be an essential data management tool for identifying ponds of high ecological quality for the HAP.



### **5.3.2 Water Framework Directive**

The EC Water Framework Directive is currently being transposed into UK legislation. As part of this process the UK Technical Advisory Group recommended that there be no minimum size limit for standing waters to be included as water bodies for risk assessment and monitoring purposes, so long as those water bodies meet certain criteria. These included elements of surface water identified as important for achieving standards or objectives for any SSSI, SPA or SAC, or to achieve ‘national or international biodiversity targets’, or ‘to provide an overview of the general condition of small elements of surface water within the river basin district’.

Responses were submitted to consultations on the importance of small water bodies, and a list of ponds known to be important for biodiversity has been prepared for English Nature to use in negotiation (Appendix 13). Responses highlighted the availability of PSYM as a method compatible with Water Framework Directive requirements, and the National Ponds Database as a data management resource.

### **5.3.3 Agri-environment schemes**

Responses were submitted to consultations on Defra’s review of agri-environment schemes. These emphasised the importance of survey work to assess pond ecological quality to measure the success of the schemes, and highlighted the availability of the National Ponds Database and website as an information tool.

## **6. Proposals for Phase 2 of the NPMN (2005 – 2007)**

### **6.1 Introduction**

At the end of Phase 1 (November 2004), the framework for the NPMN had been established as described in this report. Phase 2 (2005 to 2007) will build on this structure to implement the proposals made in the NPMN Strategy (Environment Agency and Ponds Conservation Trust 2003).

The Ponds Conservation Trust has committed to support the NPMN until at least 2009. Similar support is required from partners and funding bodies.

Support is needed both for core NPMN activities and for projects that will require specific funding. The NPMN Project Officer will carry out core activities to support the Network and data resource. It is anticipated that this funding will come from contributions from key Network partners. Funding applications for other NPMN projects will be prepared as part of the core activities. The NPMN Project Officer will carry out funded projects and manage additional staff employed to work on them.

The remainder of this chapter describes plans for Phase 2 and how they meet the aims of the Network.

### **6.2 Aims of the NPMN**

The NPMN Strategy described the following six aims of the Network.

Aim 1: To establish a monitoring programme to assess the ecological quality and biodiversity value of ponds in the UK, and identify trends over time.

Aim 2: To stimulate and co-ordinate additional pond survey activity including studies of particular species and geographic locations.

Aim 3: To establish a national pond data centre, by collating new and pre-existing datasets and making data accessible via the project website.

Aim 4: To report annually on the state of the UK's ponds and feed into policy development to protect the habitat.

Aim 5: To create a centre of pond survey expertise to promote co-ordination and standardisation of methods, and provide technical support and training.

Aim 6: To promote awareness of the Network and public involvement in pond surveys and conservation.

The following sections describe Phase 2 plans for each of these aims. For each aim, proposals are divided between core activities and project activities.

### **6.3 Aim 1: Establish a national pond monitoring programme**

The NPMN Strategy describes the characteristics of the pond monitoring programme required to deliver information on status and trends in ecological quality of the UK's ponds.

There are three options for the delivery of the programme:

- include ponds in Defra's Countryside Survey (repeating or extending the Lowland Pond Survey 1996);
- monitoring by the Environment Agency / Scottish Environment Protection Agency for Water Framework Directive or other statutory needs;
- establish partnerships between smaller organisations (e.g. local authorities, voluntary recording schemes, Wildlife Trusts) to provide national coverage.

#### **6.3.1 Core work**

##### *6.3.1.1 Promote monitoring programme*

Promote and explore the monitoring options listed above. Develop proposals for monitoring including criteria for site selection, frequency of survey etc. based on end user needs and power analysis of existing datasets. Prepare business cases and funding proposals.

*Output:* Proposals for national pond monitoring programme.

#### **6.3.2 Additional project**

##### *6.3.2.1 Co-ordinate monitoring programme*

If contracted to do so, develop plans for a programme based on funder requirements and implement the programme including organisation of surveys, data management and reporting.

*Output:* Delivery of national pond monitoring programme.

## **6.4 Aim 2: Stimulate and co-ordinate pond survey activity**

In addition to the core monitoring programme, the Network aims to promote additional pond survey activity as targeted surveys that address pond conservation questions, or add to the pond inventory.

The NPMN Strategy (section 1.1.3) lists the pond conservation questions the Network aims to address. Two priorities for Phase 2 are to identify:

- status and trends for important pond species (particularly amphibians, BAP species and alien plants);
- ponds of high ecological quality or biodiversity importance.

### **6.4.1 Core work**

#### *6.4.1.1 Co-ordinate surveys*

Discuss proposals for surveys and advise on survey design (e.g. with local authorities, Wildlife Trusts, voluntary groups), so that the data collected is the most useful for the Network. This is particularly important for the planned National Amphibian and Reptile Recording Scheme.

*Output:* 15 new survey projects that collect data in line with Network requirements.

#### *6.4.1.2 Work with Local Record Centres (LRCs)*

Meetings will be held with LRCs to promote survey activity and establish a data exchange programme with the NPMN (including agreement of data needs and activities, establishment of agreements and protocols for data exchange).

*Output:* 15 LRCs signed up to Network.

#### *6.4.1.3 Work with the recording community*

Discussions with freshwater recording schemes demonstrated the need to co-ordinate a set of reference sites for biological recorders to visit. This will be developed during Phase 2.

*Output:* Set of reference sites monitored by volunteer recorders.

#### *6.4.1.4 Work with the UK Biodiversity Action Plan (BAP) process*

For the current review of UK BAP priority species and habitats, liaise with steering group for each pond species and habitat to ensure that monitoring targets are co-ordinated, particularly with the proposed HAP for ponds of high ecological quality. Support Local BAPs for ponds and monitoring.

*Output:* Steering groups of 10 Species Action Plans and all lake Habitat Action Plans to have considered integration with the Network in BAP review.

## 6.4.2 Additional projects

### 6.4.2.1 New national public involvement surveys

Funding will be sought from the Heritage Lottery Fund and others for public involvement surveys, some in partnership with other national organisations:

- survey of alien invasive plants and selected BAP species, run by the Ponds Conservation Trust;
- survey of water vole use of ponds, in partnership with the Wildlife Trusts;
- survey of bat use of ponds, in partnership with the National Bat Monitoring Network (Bat Conservation Trust).

*Output:* Datasets from national public involvement pond surveys.

### 6.4.2.2 The New Forest Ponds Project

During Phase 1 the New Forest Ponds Project brought together existing data and partners interested in data collection in the New Forest. During Phase 2, funding will be sought to develop the project, particularly in identifying data needs and leading volunteer survey activity, in partnership with the Hampshire and Isle of Wight Wildlife Trust.

*Output:* Case study on data collection by volunteers in important pond area.

### 6.4.2.3 Monitoring ponds of high ecological quality

The core monitoring programme will assess trends in representative sites. It is also important to understand impacts on high quality ponds. The Ponds Conservation Trust is committed to surveying five high quality sites per year during 2005-2007. Commitments from other partners are needed.

*Output:* Thirty new surveys of important ponds.

### 6.4.2.4 Partnership with Ordnance Survey (OS)

Discussions will be held with Ordnance Survey. The aim will be to establish a partnership to identify ponds that appear on maps but no longer exist and ponds not yet shown on maps, to obtain OS data for the Network, and to link up identification coding systems for ponds in the National Ponds Database.

*Output:* Ordnance Survey data into the Network and data from the Network fed into OS data gathering process.

## **6.5 Aim 3: Build up the national pond data centre**

### **6.5.1 Core work**

#### *6.5.1.1 Database management*

The National Ponds Database needs ongoing management so that datasets can be added and extracted in the form required for analysis and reporting. This will involve identifying key datasets, obtaining permission for their use, defining metadata, quality assurance, data cleaning and normalisation, and digitisation, as well as adding data to the database.

*Output:* Management of National Ponds Database and website, quality assured biological data from 50 surveys added to database.

#### *6.5.1.2 Develop register of important ponds*

The list of sites defined as being of high ecological quality or of biodiversity importance started during Phase 1 will be added to during Phase 2. This register will be valuable for the proposed Habitat Action Plan for Ponds of High Ecological Quality. It will also inform Water Framework Directive implementation and identify important ponds for national and local users.

*Output:* Register of at least 1,000 important ponds.

#### *6.5.1.3 Develop the Pond Inventory*

Addition of Pond Inventory data from pre-existing and new datasets; the information held will vary from name and location information for a site to a comprehensive survey.

*Output:* 10,000 sites added to pond inventory.

#### *6.5.1.4 Partnership agreements*

Add to the number of partner organisations with formal data transfer agreements with the Network so that pond data collected by their staff is routinely added to the National Ponds Database (e.g. Highways Agency, Defence Estates, National Trust).

*Output:* 30 organisations with formal data transfer agreements with the Network.

### **6.5.2 Additional projects**

#### *6.5.2.1 Development and delivery of unique pond identification codes*

Pond data users have identified a need to be certain when data refers to a particular site by defining unique identification codes to each site. The National Ponds Database can define these identifiers based on data held on a site and provide the delivery mechanism for use of the codes and site names, ideally in partnership with the Ordnance Survey and the National Biodiversity Network.

*Output:* A standard system of pond identification codes delivered to users.

#### *6.5.2.2 Refinement of data delivery in response to user needs*

Once the web accessible database is well established and being used by practitioners and the public, a survey will be carried out to review how effectively it meets user needs. The system will be developed accordingly.

*Output:* Adaptations to delivery of data to meet user requirements.

#### *6.5.2.3 Development of a 'pond node' for the NBN Gateway*

Integration of the systems to enable delivery of habitat based data on ponds through the National Biodiversity Network (NBN) Gateway. As an intermediate step the NBN Gateway mapping facility could be developed to link directly to the National Ponds Database website.

*Output:* Data delivered via a pond node of the NBN Gateway.

#### *6.5.2.4 Link to the GBLakes database*

The GBLakes database contains information (mainly environmental data and some biological data) on water bodies of one hectare or more, including ponds. In the long term the two systems could be integrated.

*Output:* Integration with GBLakes database.

#### *6.5.2.5 Link to FreshwaterLife*

The FreshwaterLife project is building a collaborative website to provide easy access to freshwater information ([www.freshwaterlife.org](http://www.freshwaterlife.org)), which includes an ecological database of habitat and life history information.

*Output:* Links from NPMN website to FreshwaterLife ecological database.

## **6.6 Aim 4: Use the Network for reporting and policy development**

### **6.6.1 Core work**

#### *6.6.1.1 Annual pond report*

Use data collated through the Network to produce an annual ‘state of the UK’s ponds’ report, giving information on the data resource, current activities and areas of concern.

*Output:* Annual report distributed to statutory bodies, non-governmental organisations and the public.

#### *6.6.1.2 Informing policy development*

Use data collected through the Network in lobbying, responding to consultations and feeding information to Country Conservation Agencies, government departments etc. Relevant policy areas include development of the Water Framework Directive, Agri-Environment Schemes and the UK Biodiversity Action Plan process.

*Output:* Increase profile of the habitat based on sound data.

### **6.6.2 Additional projects**

#### *6.6.2.1 Co-ordinating the pond HAP*

Co-ordinate the implementation of the proposed UK Habitat Action Plan for ponds of high ecological quality using the National Ponds Database as the data resource.

*Output:* Delivery of pond HAP closely integrated with Network.



## **6.7 Aim 5: Build up the centre of pond survey expertise**

The centre of pond survey expertise will promote co-ordination and standardisation of methods and provide technical support and training.

### **6.7.1 Core work**

#### *6.7.1.1 Training courses*

Training courses in standard pond survey methods will be funded through charges to attendees. Course content will include established NPMN courses and new courses to meet user requirements (e.g. possibly pond plant and invertebrate identification courses). Some courses will be run jointly with partner organisations.

*Output:* 20 training days delivered around the UK.

#### *6.7.1.2 Development of a European standard pond survey method*

Initial steps have been taken to develop a European (CEN) and British (BSI) standard based on the National Pond Survey method. The process is ongoing.

*Output:* CEN and BSI standard pond survey method.

#### *6.7.1.3 Work with partners on standard survey methods for pond species*

*Output:* Standard methods for amphibians, adult dragonflies, water shrews and others available via the NPMN website.

#### *6.7.1.4 Build partnerships*

Revisit each of the organisations listed as potential partners in the Strategy to formalise partnerships for data exchange, funding and partnership projects.

*Output:* Formal partnerships agreed with 30 organisations.

### **6.7.2 Additional projects**

#### *6.7.2.1 Pond monitoring for schools*

RSPB field teachers have developed a simplified teaching version of the PSYM training for GCSE and A-level students. Education professionals will be consulted to develop this into teaching material to involve schools in the Network.

*Output:* Programme for school involvement in the Network.

#### *6.7.2.2 PSYM Development*

The PSYM model can currently be applied only to ponds in England and Wales surveyed in summer. The Ponds Conservation Trust already holds most of the datasets required to extend the model to spring and autumn. Approximately 30 new pond surveys are needed to add Scottish sites to PSYM and further analysis is required. In addition, the model will be strengthened by the addition of survey data from across Britain.

*Output:* PSYM model adapted i) for use in spring and autumn ii) for use in Scotland iii) to be more robust.

## **6.8 Aim 6: Promote awareness of the Network and public involvement**

Some of the activities listed under Aim 2 and Aim 5 will also promote awareness and public involvement; these are not repeated here.

### **6.8.1 Core work**

#### *6.8.1.1 Publicity opportunities*

Publicise the Network by speaking at events, running stands and workshops, and publishing articles.

*Output:* Continued high profile for the Network to bring in new partners.

#### *6.8.1.2 Twice yearly newsletters to keep Network partners informed of activities*

*Output:* Newsletters sent every six months to around 500 individuals.

#### *6.8.1.3 Annual meeting of pond surveyors*

An annual meeting will bring together the various organisations and individuals involved in the Network for presentations and workshops.

*Output:* Annual meeting of 100 people.

#### *6.8.1.4 Promoting public involvement*

Members of the public will be invited to add data to the pond inventory using the pond inventory form and by getting involved with projects to collect pond data described under Aim 2, and *Ponds for People* the Ponds Conservation Trust's community programme.

*Output:* At least 300 pond records from individuals.

### **6.8.2 Additional projects**

#### *6.8.2.1 Development of 'pond feedback' interactive web tool*

Members of the public without any biological knowledge can use the pond inventory form developed during Phase 1 to give valuable information about a pond. This data can now be entered through the website. An interactive webpage will be developed to give feedback on the pond and address some common concerns and misconceptions about pond management. For example, if a pond is full of plants the interactive tool will reassure the owner that there is no need to remove them. If the pond has many ducks or fish, the tool will explain the negative impact they may have on a pond as habitat for invertebrates and amphibians.

*Output:* 'Pond feedback' interactive tool available through the website.

## **6.9 Summary of Phase 2 outputs**

This section lists the outputs of planned activities for Phase 2 from 2005 to 2007.

### **Aim 1: Establish a national pond monitoring programme**

Core activities

- Proposals for national pond monitoring programme

Project activities

- Delivery of national pond monitoring programme

### **Aim 2: Stimulate and co-ordinate pond survey activity**

Core activities

- 15 new surveys that collect data in line with Network requirements
- Set of reference sites monitored by volunteer recorders
- 15 Local Record Centres signed up to Network
- Steering groups of 10 Species Action Plans and all lake Habitat Action Plans to have considered integration with the Network in BAP review

Project activities

- Datasets from national public involvement pond surveys
- Case study on data collection by volunteers in important pond area
- Thirty new surveys of important ponds
- Ordnance Survey data into the Network and data from the Network fed into OS data gathering process

### **Aim 3: Build up the national pond data centre**

Core activities

- Management of National Ponds Database and website, quality assured biological data from 50 surveys added to database
- Register of at least 1,000 important ponds
- 10,000 sites added to pond inventory
- 30 organisations with formal data transfer agreements with the Network

Project activities

- A standard system of pond identification codes delivered to users
- Adaptations to delivery of data to meet user requirements
- Data delivered via a pond node of the NBN Gateway
- Integration with GBLakes database
- Links from NPMN website to FreshwaterLife ecological database

#### **Aim 4: Use the Network for reporting and policy development**

##### Core activities

- Annual report distributed to statutory bodies, non governmental organisations and the public
- Increase profile of the habitat with sound data basis

##### Project activities

- Delivery of pond HAP closely integrated with Network

#### **Aim 5: Build up the centre of pond survey expertise**

##### Core activities

- 20 training days delivered around the UK
- CEN and BSI standard pond survey method
- Standard methods for amphibians, adult dragonflies, water shrews and others available via the NPMN website
- Formal partnerships agreed with 30 organisations

##### Project activities

- Programme for school involvement in the Network
- PSYM model adapted i) for use in spring and autumn ii) for use in Scotland iii) to be more robust

#### **Aim 6: Promote awareness of the Network and public involvement**

##### Core activities

- Continued high profile for the Network to bring in new partners
- Newsletters sent every six months to around 500 individuals
- Annual meeting of 100 people
- At least 300 pond records from individuals

##### Project activities

- ‘Pond feedback’ interactive tool available through the website

## 7. Summary of outputs from Phase 1

In summary, the major outputs of Phase 1 were:

- publishing the Strategy document;
- creating and distributing publicity leaflets;
- holding a launch event;
- delivering presentations, running stands and workshops and displaying posters;
- developing contacts and holding partnership meetings;
- reviewing the PSYM manual;
- making the PSYM model directly available to Environment Agency staff;
- making the PSYM model available to all via the project website;
- running eight training courses covering the PSYM survey methodology;
- developing training courses for specific requirements;
- drafting a European standard for the PSYM survey method;
- developing a new pond inventory survey fieldsheet;
- developing a new form for recording dragonflies at ponds with the British Dragonfly Society;
- developing the National Ponds Database;
- creating the NPMN website at [www.pondnetwork.org.uk](http://www.pondnetwork.org.uk) which enables users to submit and view pond data and use the PSYM model;
- developing a data management strategy, data access agreement and quality control procedure;
- delivering a list of ponds of biodiversity importance to English Nature;
- reviewing a habitat based approach to biodiversity data management for the NBN;
- co-ordinating and promoting pond survey activities including studies of single species (water shrews), BAP species (New Forest Ponds), taxon groups (British Dragonfly Society), and local areas (Hertfordshire Pond Survey, Ponds, Pools and Puddles project);
- submitting bids for funding during Phase 1;
- working to influence UK policy to promote pond survey activity;
- developing proposals for Phase 2 to ensure the continuation of the project as a sustainable initiative.

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## 9. List of abbreviations

BAP	Biodiversity Action Plan
BDS	British Dragonfly Society
BSI	British Standards Institute
CEN	European Committee for Standardization ( <i>Comité Européen de Normalisation</i> )
Defra	Department for Environment Food and Rural Affairs
HAP	Habitat Action Plan
LRC	Local Record Centre
NBN	National Biodiversity Network
NPMN	National Pond Monitoring Network
OS	Ordnance Survey
PCT	Ponds Conservation Trust
PCTPR	Ponds Conservation Trust: Policy and Research
PSYM	Predictive SYstem for Multimetrics (pronounced ‘sim’)
RIVPACS	River InVertebrate Prediction and Classification System
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest