



## 4.1 Standing Open Water Habitat Action Plan

### VISION

Every lake, reservoir and canal is kept free from pollution and rubbish and the water quality is capable of supporting a diverse variety of fish and other aquatic life. Banks and margins are appropriately managed and protected against impacts from development and other potentially damaging activities, allowing flora and fauna to thrive.

### KEY FACTS

#### What have we got?

Following the massive loss of over a million ponds throughout the UK in the last century (about three-quarters of their total number), the decline has slowed but exact numbers are still unclear. We do know, however, that some parts of Swindon Borough have suffered far greater losses than the UK average: South Marston Parish, for example, had 36 ponds listed in the 1880s but now has only one. Just under three per cent remains now, compared with about 25% nationally (Ponds Conservation Trust). The recognised importance of these habitats is such that it is unlikely to decrease further. Indeed, with the on-going restoration of the Wilts and Berks Canal by the Wilts and Berks Canal Trust (W&BCT) and the creation of new sections of canal and flood storage areas in the proposed Southern Development Area, the amount of standing open water in the Borough is likely to increase. The quality of these water bodies is currently not well understood. Old established areas of SOW contain assemblages of plants and animals that have developed over time. Monitoring techniques and programmes are still being developed for larger water bodies; for ponds, meaningful methods offering national comparability of data have only relatively recently become available.

Much of the standing open water in Swindon Borough has resulted from human activity. Examples include: the Wilts & Berks Canal and its old supply reservoir, Coate Water - a Site of Special Scientific Interest (SSSI) - and the Swindon Sewage Treatment Works silt lagoons, a haven for bird species, and clay pits, such as Plaum's and Telford's pit, adjacent to Brick Kiln Lane. Natural standing open water in the Borough is scarce.

#### Why is this habitat important?

We do not know how much SOW exists in Swindon Borough, or how important for biodiversity these water bodies are. However, many are home to some of the country's rarest protected species. Ponds in the Southern Development Area, for example, are extremely important for great crested newts and other amphibians (and as such will be protected during the proposed development of the site). Some sections of the old Wilts and Berks Canal support water voles, Britain's fastest-declining mammal. Water voles and great crested newts are important on a European scale, and have been listed under the UK Biodiversity Action Plan. They are protected by legislation such as the Wildlife & Countryside Act (1981 – as amended).

Dragonflies, wintering wildfowl, passage waders (migrant bird species) and various other invertebrates are types of wildlife for which SOW is important. Otters have returned to the Borough, moving along the rivers, and the open water bodies are also important to them.

#### How is this habitat protected?

Perhaps the most notable area of SOW within Swindon Borough is Coate Water SSSI. This old canal water supply reservoir, to the southeast of Swindon, has been designated as a protected site because of its national importance for dragonflies (some 15 species have been recorded here). Other areas are also important for wildlife at Borough level; for instance, Lydiard Park, Swindon Sewage

Treatment Works lagoons and Rushy Platt are all County Wildlife Sites and support protected species such as water voles and great crested newts.

Other areas are not specially designated but are very important locally. Given the dense urban nature of Swindon, these areas are especially important to local residents. Peatmoor Lagoon, Shaftesbury Avenue and Liden Lagoon, to name but a few, form the focus of several “park” areas important for fishing, dog-walking, duck-feeding and other recreational activities.

## OPPORTUNITIES AND THREATS

Given the huge diversity of habitats covered by the definition of “Standing Open Water”, it follows that there are a large number of pressures on these areas and there are many opportunities to improve them for wildlife.

### Opportunities

A rural pond or lake may find itself surrounded by housing, with the resulting mown grass or tarmac surround of little ecological value. However, careful planning and management can, hopefully, result in the opposite.

**Canal restoration:** brings with it the opportunity to increase the amount of SOW within Swindon Borough. Opportunities to create wetland habitats associated with the canal should also be explored.

**Natural succession:** Over time, silt and plant remains will build up and threaten to infill a pond or lake. From time to time it may be decided to dredge a water body to maintain its desired characteristics. This may bring the chance to improve on the original “design” by adding more wildlife-friendly features.

### Threats

Demand for development land continues, but with the recognised importance of these water bodies, the amount of habitat is unlikely to change. Terrestrial habitats adjacent to areas of

SOW are more likely to be affected, leaving SOW sites isolated.

The restoration of derelict areas of canal and changes in management (especially to allow recreational boat use), combined with an increased movement of water through the system, can, without careful planning and mitigation, be detrimental to flora and fauna.

Open water comes under a multitude of differing pressures; fishing, feral duck and geese feeding, dog-walking and active recreation. All these activities can exert pressure upon the water bodies and the surrounding habitats. There is more scope for sensitive management to allow a sustainable balance between the needs of people and nature to be achieved.

**Introduction of non-native species:** The deliberate or accidental introduction of inappropriate animals or plants causes problems for flora and fauna. Signal crayfish, catfish, mink or even goldfish can have disastrous effects by displacing or even killing our native species. Goldfish are known to interbreed with crucian carp and affect the genetic integrity of the species. The introduction of fish can also have a devastating affect on some amphibians, particularly great crested newts. Alien plants (those not from the UK) spreading or dumped from gardens or elsewhere can smother local species and lead to their disappearance from the area. Their management and removal may sometimes reverse these effects but can be very expensive and time consuming.

**Climate change:** It is now widely accepted that changes to the rainfall patterns brought about by man’s use of fossil fuels will occur. The extent of the changes is still being discussed. Most scientists agree there will be warmer, wetter, winters and hotter, dryer, summers in the UK. We can expect to see changes in distribution of some species of plants and animals over the coming decades as a result. Similarly, as with development pressure, demand for water and its disposal will increase, bringing challenges for all.

**Run Off:** Two types of run off threaten ponds

- Direct pollution washing in from surrounding areas, such as salt and oil from nearby roads.
- Soil erosion, especially on agricultural land.

## **PRIORITIES FOR ACTION**

### **What needs to be done?**

Key targets include protecting the existing resource, the creation of appropriate buffer zones around fragile sites and the creation of new Standing Open Water habitats for wildlife and people.

Therefore, key actions will reflect the need to protect this existing resource, and to ensure these sites are managed. They should identify potential buffer zones, and include creation of new Standing Open Water habitat.

## **WHERE CAN I FIND EXAMPLES OF THIS HABITAT?**

- Coate Water A Site of Special Scientific Interest owned and managed by Swindon Borough Council 01793 771419.
- Rushy Platt Canal Side Park Featuring a newly restored section of the Wilts and Berks Canal 01793 480312.
- Stanton Park Owned and managed by Swindon Borough Council 01793 771419.

### **AUTHOR**

Daryl Buck, The Environment Agency, Isis House,  
Howbery Park, Wallingford, OX10 8BD.  
Tel (01491) 828354.



## 4.2 Urban Ponds Habitat Action Plan

### VISION

Every pond in a school ground, private garden or built-up area is valued and enjoyed by the local inhabitants and provides homes for frogs, newts, damselflies, birds and aquatic plants. Every new development in Swindon to include new ponds, created and managed for wildlife.

### KEY FACTS

#### What have we got?

Many of the urban ponds in Swindon can be dated back to a time when the area was farmland. Housing and other development has built up around ponds and often with the added loss of hedgerows and meadows that would once have provided wildlife corridors linking them to other habitats.

Some ponds have been created as a result of developments. In the urban environment much of the land surface is tarmac and concrete increasing levels of surface run off. This excess water is often channelled through pipes to rivers, streams, ditches or specially designed flood storage areas. Flood storage areas are a form of urban pond, often holding water for the wetter months of the year. They act to store the water and release it slowly into waterways, reducing the risk of downstream flooding in the catchment.

Although there has been an overall decline in the number of ponds nationwide, in the future the UK may have an increase in the number of urban ponds. As urban areas increase in size and more houses are built the number of urban ponds and water features may increase accordingly. Urban ponds often occur as attractive features in open spaces in the urban environment and as environmental education tools in school grounds.

Whilst there is the possibility of an increase in urban ponds, some garden ponds are seen as a health and safety risk, especially to families with young children. Advice is often provided to new homeowners on how to go about filling in a garden pond.

#### Why is this habitat important?

Apart from giving great pleasure, community and garden ponds are valuable habitats for many species of native wildlife. Ponds attract all sorts of wildlife into the urban setting including passing birds and mammals needing somewhere to drink, as well as the more commonly associated amphibians and insects. It is not surprising then that a number of community groups are actively involved in the management of urban ponds, e.g. Church Park Conservation Area and Raybrook Meadows. This usually takes the form of practical conservation work parties or involvement in the monitoring and surveying of ponds and their associated species.

Ponds are a valuable educational resource. One of the first subjects taught at primary school is the lifecycle of a frog. Ponds are often incorporated into school wildlife areas and become the focus of a living laboratory for children to explore.

Urban ponds can contain an abundance of wildlife not found in other urban habitats including rare and protected species. Some ponds are constructed as a water feature or to house ornamental fish such as koi carp and these often have very little biodiversity value. Ponds are also home to species that are of benefit to the avid gardener.

#### How is this habitat protected?

Most of Swindon's ponds have no official protection unless they are located on a County Wildlife Site or are part of an SSSI. However, species such as the water vole and great crested newts are given protection under the Conservation (Natural Habitats etc) Regulations 1994 (aka the Habitats Regulations) and the Wildlife and Countryside Act 1981 (as amended).

The loss of ponds nationwide means that they are included as a priority under the UK, South West and Wiltshire BAPs. Swindon, it seems, is a very important area for Britain's most protected amphibian, the great crested newt (GCN). This is a pond specialist, protected both by EU and UK law and found in a number of ponds within the Borough.

Anglers have been instrumental in the protection, management and restoration works that have occurred on many urban ponds, e.g. Plaum's Pit and Shaftesbury Lakes.

## OPPORTUNITIES AND THREATS

### Opportunities

In the urban environment, there are great opportunities to create ponds both for wildlife and people. Schools should be encouraged to create wildlife ponds to educate future generations about the importance of water environments to the biodiversity of life. Ponds can be built into public open spaces and where they exist, they should be managed with the help of the local community. Gardeners should be encouraged to use green gardening techniques and create wildlife-friendly ponds.

A strategy for dealing with urban run off, in particular from roads, is to use the Sustainable Urban Drainage System (SUDS). A series of ponds that help to cleanse the water, before being directed to a watercourse. These ponds will inevitably attract wildlife and are a source of water habitat.

Natural succession – this natural process occurs with the build-up of silt and debris. Each stage in succession attracts a different assemblage of plants and animals and a series of ponds representing each stage is favoured.

### Threats

**Inappropriate management:** Simple measures, such as removing excess weed growth from garden ponds in the autumn, and leaving the material next to the pond for a few days before composting, can improve the wildlife value of the pond.

**Pollution:** This comes in many different forms, e.g. heavy metals, pesticides, and litter. One of the biggest threats in the urban environment is urban run off. Smaller ponds are more susceptible as they have less scope to dilute pollutants.

**Variation in groundwater levels:** Land drainage for both agriculture and development has changed the water table, often leading to the loss of natural ponds.

**Development:** This often comes in the form of buildings (housing and industry) and roads, which then generally entail drainage.

**People:** Often people do not see the value in ponds and will use them as a dumping ground to throw away unwanted items and green garden waste.

**Non-native alien species:** In Swindon, introduced species such as the bullfrog, Azolla (water fern), Australian swamp stonecrop (Crassula), signal crayfish and terrapins can have a devastating effect on native wildlife by displacing and preying on our native plants and animals.

**Climate change:** Global warming could lead to ponds drying out for long periods.

## PRIORITIES FOR ACTION

### What needs to be done?

Over the life of this plan it is hoped that existing urban ponds and their wildlife are protected, that much is discovered about the urban pond resource, and awareness of the importance of urban ponds is raised.

Key targets will therefore be to:

- Protect all known ponds of biodiversity importance.
- Actively promote surveys of urban ponds and the wildlife they contain.
- Raise awareness of urban ponds as havens for wildlife and places of tranquillity and beauty.

## WHERE CAN I FIND EXAMPLES OF THIS HABITAT?

- Plaums Pit. Owned and managed by Swindon Borough Council 01793 771419. Just off Cheney Manor Road.
- Swindon Road Pond. Just off Swindon Road.
- Raybrook Meadow. In Mannington Rec - just off Pasture Close.
- Church Park Conservation Area. Managed by Stratton Parish Council 01793 823761.
- Bishopstone Duck Pond. In the centre of the village.

### AUTHOR

Jo Sayers  
Swindon Water for Wildlife Officer.  
Wiltshire Wildlife Trust,  
The Swindon Environment Centre,  
Suite 2 Beaver House,  
Victoria Road,  
Swindon.  
SN1 3UZ  
Tel (01793) 526229  
Email [jos@wiltshirewildlife.org](mailto:jos@wiltshirewildlife.org)



## 4.3 Rivers and Streams Habitat Action Plan

### VISION

All flowing water bodies, including ditches, are part of an important network, linking areas of high biodiversity. Their margins, buffer zones and channels are free of pollution, including rubbish, and support a wide variety of both rare and common forms of aquatic and terrestrial life. The appropriately managed corridors and the wider floodplain are valued by all the Borough's communities and are protected from encroaching development and other potentially damaging activities.

### KEY FACTS

#### What have we got?

There is an estimated 250,000km of river channel in Britain. The length of ditches and other small watercourses in the UK is less well known, but it likely to be many thousands of kilometres. In Swindon Borough alone there are over 175km of rivers and streams, of which about 100km is designated "Main River" under the Environment Agency's Flood Defence remit. Approximately 75km are smaller streams but figures for the very smallest headwaters and ditches are not readily available.

The River Thames forms the northern boundary of the Borough and one of its tributaries, the River Cole, provides the eastern limit. The River Ray catchment and its tributaries flow generally northwards into the Thames. The headwaters of the Kennet (including the Og) originate in the Borough and flow south, staying within the Borough for only a few kilometres before joining the Thames much further on at Reading.

Rivers have influenced many local place names. Examples include "Hreod Burna", which meant "reedy stream" in Anglo-Saxon times, Rodbourne or "red river", and Bydemill Brook – "By the Mill Brook".

#### Why is this habitat important?

Exerting their influence through the Borough, and especially within the urban footprint of Swindon itself, the rivers Cole, Ray and their tributaries form especially important corridors within the town, having affected the layout of the built environment and by providing "green lungs" into the urban centre. The importance of these green corridors has been recognised by local planners, by their designation and protection as "Strategic Green Corridors" in the Swindon Local Plan.

Rivers and streams form a key part of the landscape. They are used by humans for a wide variety of purposes, in addition to supporting a wealth of plants and animals. Although some animals and plants require dry phases in their life cycles, the majority depend on the presence of enough water of sufficient quality to survive. In addition to providing homes for waterdwelling plants and animals, rivers are also important for other flora and fauna dependent on the riverine environment. Ten per cent of the UK's 30,000 species of invertebrates are dependent on the aquatic environment, with 1,000 species dependent on the bankside margins alone (Armitage & Petts 1992). Otters and kingfishers are betterknown examples, both using the watercourse as a corridor for movement and to supply most of their food, predominantly fish.

Fish also play a valuable part in the recreational uses of rivers. The Thames, Ray and Cole are well visited by anglers, as well as many others who enjoy the quiet interaction with nature that rivers often bring.

### How is this habitat protected?

Generally, water quality is good and has improved over recent decades due to stricter environmental legislation and its enforcement, coupled with investment in infrastructure. Some watercourses still suffer a legacy of contamination, for example the Hreod Burna. Habitat quality, however, is variable, with many instances of channel modification occurring in the past for land drainage purposes and loss of associated habitats because of agricultural or development pressure.

In the open countryside and within urban areas, watercourses provide essential wildlife corridors linking otherwise isolated pieces of habitat. Without these links, smaller parcels of land might not support viable populations of plants and animals and rarer species may vanish, becoming locally, nationally or even globally extinct. Therefore, it is critical that, along with the channel itself, adequate protection is given to the whole river corridor by appropriate management and land use policies. One example of how policy helps on a local level is the designation of 'County Wildlife Sites' to those areas most important locally, giving them increased protection. Parts of the rivers Ray, Cole, Lidd, Dorcan Brook, Bydemill Brook, Elcombe Brook and South Marston Brook have already been designated as such owing to the valuable plant and animal communities they support.

Some plants and animals are internationally, nationally, as well as locally important. The otter, water vole, white-clawed crayfish, bullhead and black poplar are associated with the Borough's watercourses. Otters are making a great recovery nationally having been severely affected by pesticide use and persecution. We know they are returning from sightings, field-signs and, sadly, road-kills.

Water voles, Britain's fastest declining mammal (due to habitat loss and feral mink) are present on a number of the rivers including the Ray and Cole where suitable habitat remains. Being very loyal to their home site means that dispersal and re-

colonisation is slow, making sympathetic management of occupied sites very important. white-clawed crayfish are still present on some tributaries of the Cole, having been affected elsewhere by habitat destruction, pollution and, more recently, the invasive American signal crayfish. These species, along with others, are protected under the Wildlife and Countryside Act (1981 - as amended).

## OPPORTUNITIES AND THREATS

### Opportunities

The biodiversity of watercourses is highly dependent on the physical nature of the channel. Straight, uniform channels, promoted for land drainage to improve agricultural productivity in the latter part of the 1900s led to a reduction in biodiversity. Recent moves to less intensive agriculture and a better understanding of ecology are leading to changes in farming subsidies which will enable some physical improvements to be made. Enhancement opportunities may arise whenever works are proposed on watercourses and their immediate surrounds. Land use planning policies and legislative requirements will help identify opportunities to reverse some of the damage done. Of course, the flora and fauna of the watercourse is intimately linked to the quality and quantity of water in the system. Changes to management of farmland, such as reduced use of pesticides and fertilisers, will have beneficial effects on watercourses.

**Flood Defence Maintenance:** The Environment Agency and Swindon Borough Council have a duty to reduce the risk of flooding to people and property from watercourses. Management needs to be appropriate for the circumstances. Sympathetic consideration of the nature, extent and timing of management is required, together with an appreciation of any possible enhancement opportunities which the work might provide.

**Development:** Planning conditions and agreements offer opportunities for conservation and enhancement of rivers and streams.

## Threats

**Development pressure:** Increased requirement for land directly threatens watercourses, placing them at risk of diversion, infilling or culverting. Increased hard surfaces in urban areas leads to increased flows, scouring and increased pollution. Development in the floodplain can threaten habitats linked to rivers and streams, as well as increasing the risk of flooding elsewhere, the need for potentially damaging work to watercourses as well as the direct loss of habitat. Indirectly, threats from development include disturbance to wildlife and increases in pollution. Local Plan policies, together with legislative controls (e.g. Environment Agency consents) have the potential to reduce the risk of adverse affects from new development.

**Water supply:** Increased population and greater use of water per head of population means that more water is abstracted from the ground and directly from our rivers. Most of the water for the Swindon Borough is supplied from the rivers Thames and Kennet. Increased demand for water is a real issue for the Borough's neighbouring areas. There has been no increased water abstraction in the Swindon area for some time (at least 10 years) and no new licences for at least 20 years. An increased demand for water has been met by transfer from Farmoor reservoir in Oxfordshire. Over-abstraction leads to reduced river flows and even results in streams drying unnaturally. River ecology changes with some species of plants and animals becoming scarce or disappearing altogether. Education for better public awareness, coupled with advances in new technologies such as low-consumption domestic appliances and changes in water resource management, will help to alleviate some of the problem.

**Effluent disposal:** Increased population results in greater volumes of sewage and other discharges to our rivers. This can lead to enrichment or pollution of the rivers. Occasionally, drains are inadvertently connected to the surface water sewer instead of the "foul" sewer. These misconnections, which have occurred at Seven

Fields, Penhill, cause ongoing problems in the River Ray and are time-consuming and expensive to locate and remedy.

**Pollution:** Occasionally, Swindon's industry releases contaminants that seriously affect watercourses. Other activities also sometimes result in pollution to the watercourses, directly or indirectly via the sewerage network.

**Climate change:** Hotter, dryer summers and wetter winters are predicted as a result of human use of fossil fuels. Greater plant growth and higher flows may require more weed cutting and other management of the watercourses. Dryer summers place greater pressure on the watercourses from which water supplies are obtained and result in lower effluent dilution.

**Recreation Pressure:** Many recreational activities occur along our watercourses. Fishing, walking, cycling, feeding the ducks, etc can all disturb wildlife. Pressures rise with increased recreation time available. Management of a site for one particular activity may not suit another or be sympathetic to the needs of wildlife. Sympathetic and sustainable management of these sites is required.

**Invasive species:** Deliberate introduction of non-native (not from the UK) animals such as the signal crayfish (a 1980's farm diversification initiative), the American mink (released and escaped from mink fur-farms) have caused serious damage to our native wildlife. (Signal crayfish are larger, more aggressive, carry crayfish plague and displace the native crayfish. Mink are able to pursue water voles on land and in water, contributing significantly to their sharp decline.)

Accidental or deliberate releases of garden plants such as Japanese knotweed, Himalayan balsam and others cause displacement of our native flora. Their shallow root system can lead to bank erosion when winter floods rip out the dead stems and Japanese knotweed can grow through concrete. Invasive water plants such as Australian swamp stoncrop and floating pennywort grow

prolifically, shading out native plants and clogging channels, rendering them useless for fish and other animals and increasing flood risk.

## **PRIORITIES FOR ACTION**

### **What needs to be done?**

Key targets include protecting the existing resource, the creation of appropriate buffer zones around fragile sites and the creation of improved riverine habitats for wildlife and people.

Therefore, key actions:

- Will reflect the need to protect this existing resource, and to ensure these sites are sympathetically managed.
- Should identify sites with the potential for buffer-zone creation or improvement.
- Include restoration/enhancement of degraded riverine habitats.

## **WHERE CAN I FIND EXAMPLES OF THIS HABITAT?**

- The Thames Path between Cricklade and Lechlade is part of the National Trail and a great way to view the river. National Trails office 01865 810224.
- The River Cole at Coleshill has been restored by The National Trust. Periodic open days are organised for visitors 01793 762209.
- Within the urban area the River Ray Parkway, starting at Mannington Rec, has produced a number of otter sightings in recent years.

### **AUTHOR**

Daryl Buck, Environment Agency, Howbery Park, Wallingford, OXON, OX10 8BD.



## 4.4 Wetlands Habitat Action Plan

### VISION

**A greatly expanded network of marsh and other frequently flooded areas, rich in bird and plant life, protected from development and treated as part of the Borough's natural flood defence.**

### KEY FACTS

#### What have we got?

Wetlands have not been surveyed to any great extent within Swindon Borough; however there are areas where these habitats stand out. Rushy Platt Canalside Park has a 1.2ha area of fen adjacent to the River Ray. Areas such as Rivermead, Shaw Forest Park and the sludge beds of the Swindon Sewage Treatment Works (SSTW) are important sites along the River Ray corridor. Reed can be found along stretches of the River Thames, Ray and Cole and small areas of reed and swamp can be found along many of the tributaries to these rivers, e.g. Inglesham Riverside Park Swamp. Stanton Park has an area of reedbed around roughly 50% of the lake. Moulden Hill and Coate Water have reed fringes around their edge and the SE arm of Coate Lake has an excellent area of reedbed.

#### Why is this habitat important?

Wetlands are very diverse and important habitats that perform a multitude of functions. Not only are they beautiful, relaxing places, they also provide a home to a mixture of plants and animals that are specially adapted to living on permanently wet ground and are often found in no other habitats.

The loss of substantial areas of wetland habitats have been the primary cause of declines in many UK birds that are associated with them. Reed buntings, bitterns and grasshopper warblers are all red-listed species of conservation concern that breed on and around wetlands, relying on these habitats to feed their young on the plentiful supply of invertebrates these areas provide. In winter, these birds then switch to the plentiful

bounty of seeds wetland plants provide. Reedbeds are important winter roost sites for a number of other nationally declining red-listed birds such as the starling and linnet, both of which are showing rapid declines in population size.

Fen, marsh and swamp appear as a broad habitat under the UK BAP. It is estimated that over 600 species of plants and 7,500 invertebrates live in UK wetlands. Wetlands are home to two of the UK's most protected mammals the otter and the water vole and are important habitats for many amphibians including great crested newts, as well as reptiles such as grass snakes.

#### How is this habitat protected?

Along with Coate water SSSI, a number of other sites have been designated as County Wildlife Sites (CWS). These include areas such as Lechlade Swamp, the Sewage Treatment Works and reedy areas of the headwaters of the River Cole.

Wetlands are very important for water storage. They act as a sponge in winter months and soak up excess water to alleviate flooding. Many of the urban Borough's rivers and streams have specially designed flood storage areas (FSAs) that, due to regular inundation of surface water, have developed marsh and swamp communities. Some examples of FSAs include Kembrey Street FSA, Rivermead and Dorcan FSA. This is particularly important in a highly urbanised area such as Swindon, where surface run off is increased by the high levels of hard surfaces. Water is funnelled away from built-up areas in higher quantities than in rural areas.

## OPPORTUNITIES AND THREATS

### Opportunities

There are many opportunities to enhance and increase wetland habitats in Swindon Borough. Where the opportunity exists, floodplains can be extended. This not only increases wetland habitat but also provides flood defence, very important in the urban environment, where development is often on the edge of waterways and wetlands. Specially designed flood storage areas could be

included in developments to take surface run off. Flood storage areas in Swindon have developed into valuable wetlands that help to cleanse water and provide habitat for wetland plants and animals.

Reedbeds and swampy areas could be created adjacent to many rivers, streams, lakes and ponds. Small reed fringes or wet swampy margins have huge benefits to insects and animals. These areas add a natural buffer zone and help protect the habitat and the wildlife they provide homes for.

### Threats

- Fens are a transitional habitat (semi-natural system) and management is needed to maintain open-fen communities with their associated species richness. Without some form of management, of mowing, grazing or scrub clearance, natural succession will take place and the habitat will revert to woodland. With reedbeds, where there is no intervention a layer of leaf litter accumulates and eventually this will give rise to a medium for succession.
- Loss of area: drainage, changes in agricultural practice, new development and flood defences have affected the amount of area of fen, swamp and marsh.
- Water abstraction: increased water abstraction for household and industrial consumption has led to a lower water table in many areas and the drying-up of wetlands.
- Fragmentation, or splitting up areas of wet habitats: species that are not very mobile can become locally extinct if they are unable to move between remaining sites and if sites are no longer large enough to support viable populations.
- Lack of management or inappropriate management: if these sites are left unmanaged, natural succession takes place; scrub develops which causes wetland areas to dry up.
- Inappropriate tree-planting can lead to shading and localised lowering of groundwater levels.
- Physical destruction, mainly through development.
- Recreation pressure, particularly in the urban environment through dog disturbance and anglers clearing fishing swims.
- Nutrient enrichment (and pollution) can lead to dominance by weeds which may out-compete the wetland plants specific to that habitat. A shift in plant community structure may result in the loss of species for which the habitat is valued.
- Invasive plants and animals: this mainly refers to the introduction of alien species such as Himalayan balsam, mink and Japanese knotweed.
- Navigation: demands for water, pollution and boat wash can all have detrimental effects on wetlands, both adjacent to canal routes, or those fringing the waterway itself.
- Climate Change: changes in rainfall patterns can affect water availability. Other climatic factors may favour the growth of competing plants or directly influence the survival of certain species.

## PRIORITIES FOR ACTION

### What needs to be done?

Wetlands sites have suffered as they have not been studied to any great extent within Swindon Borough, an issue which needs to be addressed. We need to reverse the historic decline in wetland habitat.

Priorities are therefore to:

- Survey Swindon Borough for wetland habitats and associated species,
- To bring existing habitats into sympathetic management and,
- Create 10ha of reedbed linked to other habitat types.

## WHERE CAN I FIND EXAMPLES OF THIS HABITAT?

- Coate Water. A Site of Special Scientific Interest owned and managed by Swindon Borough Council 01793 771419.
- Rushy Platt Nature Reserve. Accessible from the newly restored canal at the bottom of Kingshill. Managed by Wiltshire Wildlife Trust 01793 526228.
- Stanton Park. Owned and managed by Swindon Borough Council 01793 771419.

### AUTHOR

Jo Sayers, Swindon Water for Wildlife Officer,  
Wiltshire Wildlife Trust, The Swindon Environment  
Centre, Suite 2 Beaver House,  
Victoria Road, Swindon.SN1 3UZ  
Tel (01793) 526229  
Email jos@wiltshirewildlife.org