



RIVERS & STREAMS

1. INTRODUCTION

The sub-region straddles two major water catchments of middle England. These are the Avon Catchment which takes water from the south and east of the sub-region into the River Severn and Bristol Channel via the Avon and its tributaries (e.g. the Sowe, Leam, Dene, Stour, Alne and Arrow), and the Tame Catchment which takes water from the north-west of the county (as well as much of the W. Midlands) into the Trent, Humber

River Leam © Steven Falk

and North Sea via the Tame and its tributaries

(e.g. the Blythe, Cole and Anker). A tiny part of the Thames Catchment also lies within the extreme southern tip of Warwickshire. There are over 2000 km of rivers and streams in this sub-region of varying ecological character and quality. That diversity relates both to the watercourses themselves and to their immediate surroundings, referred to as river corridors.



Few truly natural watercourses now exist in the sub-region as nearly all rivers and most streams have been severely modified by resectioning, straightening or deepening. This was mainly carried out to allow land drainage for agricultural intensification during the period 1945 to 1990. In addition some schemes were carried out to alleviate flooding or to allow pleasure boats to use rivers and there has been a major increase in riverside development. In most cases in-stream habitat diversity has been virtually eliminated.

Ecologically the best watercourses are those that exhibit the natural channel features typical of lowland watercourses. These include a variety of flow patterns (riffles, runs, glides, pools and marginal deadwater), a variety of channel features (side bars, point bars, silt deposits and islands) and meanders and associated erosion/deposition features. These and the natural variation of bankside habitats create a large range of niches upon which a huge range of species depend.

Water quality in urban rivers in the area has improved immensely in recent decades but diffuse pollution remains a serious problem in many rivers. Although some riparian wildlife is relatively pollution tolerant, e.g. fennel pondweed and blanket-weed, other species such as trout and plants like river water crowfoot cannot survive where pollution levels are high. One indication of the general improvement in water quality is that otters are making a slow return following the banning of harmful pesticides that once contaminated their food, and helped by a reduction in persecution.

Watercourses are among the most important wildlife corridors within the intensively farmed local landscapes and within many urban areas. They also contribute much to local landscape character, both through place-names like 'Stratford-upon-Avon' and their physical presence in many local villages, towns and beauty spots.

2. OUR OBJECTIVES & TARGETS	TARGET
A. To identify the most important stretches of water course for wildlife and ensure they become protected through the designation process.	2005-2015
B. To ensure that the quality of water courses and their corridors does not undergo further deterioration and to mitigate/compensate for necessary loss.	2005-2015
C. To maintain / improve the condition and increase the extent of water courses with priority given to those holding UK Biodiversity Action Plan Priority Species & Red Data Book species	by 2009
D. To identify sites suitable for river restoration and endeavour to carry out at least two schemes.	by 2008
E. To promote good management practice and to share knowledge.	2005-2015
F. To raise public awareness of the importance of rivers and streams.	2005-2015

ASSOCIATED HABITAT PLANS

- Ponds, Lakes & Reservoirs
- Quarries & Gravel Pits
- Reedbeds

ASSOCIATED SPECIES PLANS

- Snipe
- Great Crested Newt
- Water Vole
- Bats
- Otter
- White-clawed Crayfish

3. NATIONAL BAP OBJECTIVES & TARGETS

The national Rivers and Streams Habitat Statement encourages the following:

- *Maintain and improve the quality, state and structure of all UK rivers and streams and their associated floodplains*
- *Restore degraded rivers and streams taking account of water quality and quantity, structure and hydraulic connection with the floodplain*

4. CURRENT STATUS

The Environment Agency carries out monitoring of watercourses throughout Warwickshire as part of the General Quality Assessment scheme (GQA). This is the Agency's national method for classifying water quality in rivers. GQA is assessed in four separate ways: chemistry, biology, nutrients and aesthetics. Sites are monitored monthly and annual results are based on the previous three years results combined. The chemical quality of rivers is recorded on a scale of A – F (Very Good to Bad). In Warwickshire no rivers are classed as F (bad) but a small section of the River Cole is graded as E (poor). The majority of rivers in Warwickshire, Coventry and Solihull, are classed as B (good); these include most of the Avon, the Itchen, the Leam, the Sowe and most of the River Blythe. Several rivers are classed as A (very good) including the Stour, Hachford Brook and parts of the River Dene. In general, chemical and biological quality of rivers in the county is improving, partly due to improving sewage treatment works and better pollution control.

Most rivers in the county have been heavily modified by re-sectioning, and in some cases straightening to reduce the incidence of flooding of farmland and to allow for land drainage. This has led to rivers being much more deeply incised than would be natural. This has severely limited the range of in-stream habitats present and almost completely eliminated floodplain wetlands.

Removing most of the in-stream habitat and largely preventing regular flooding of farmland has destroyed the physical, biological and chemical mechanisms which enable natural rivers to reduce the impact of organic pollution resulting in serious impacts upon water quality. This is of course in addition to the obvious severe impact on wildlife.

4.1 Legal and Policy Status

There are a number of Sites of Special Scientific Interest (SSSIs) in Warwickshire that are associated with rivers and streams. A 39km stretch of the River Blythe from Spring Brook to its confluence with the River Cole is designated as a SSSI, for its clear succession of plant communities, rich flora (both emergent and floating), diverse invertebrates and physical character. A section of the River Itchen, south of Bishop's Itchington, has been selected as a geological SSSI for its fluvial processes. The River Anker flows through Alvecote Pools SSSI which straddles the Warwickshire / Staffordshire border in a series of shallow pools caused by colliery subsidence; it is locally important for bird communities. Similarly, the Smite Brook flows through Combe Pool SSSI and Country Park which holds the largest heronry in Warwickshire.

LNRs with rivers or streams include the River Arrow at Alcester, Stonebridge Meadows, Leam Valley Nature Reserve and Whitnash Brook, Leamington.

In addition to the above, the EA, Water Companies and Local Authorities have a statutory duty to further conservation where consistent with purposes of enactments relating to their functions (as set out in the Water Resources Act 1991, the Land Drainage Act 1991 and the Environment Act 1995). The EA has a statutory duty for pollution control, Flood Defence and control of water abstractions.

4.2 Current Factors Affecting The Habitat

- **Pollution** - including eutrophication, agricultural run-off and industrial effluents, the latter particularly evident close to industrial estates.
- **Excessive water abstraction causing low flows** – both ground water and surface water abstraction. Particularly evident near certain boreholes e.g. Haseley and on the River Sherbourne.
- **Land drainage and flood defence works** – where carried out insensitively, can result in loss of habitat diversity and isolate watercourses from their floodplains. It can also prevent the rivers natural methods of removing nutrients and suspended solids and improving water quality.
- **Modification for boat traffic** – decreases in-stream habitat, which reduces ecological value and the carrying capacity for fish. There are currently two navigation proposals in consultation, one for the Upper Avon and one for the Arrow. While the Environment Agency supports navigation in principle, both of these applications will have a significant detrimental effect on the ecology of both rivers. The Environment Agency will not support these applications as they stand.
- **Inappropriate bank management** – including excessive grazing, mowing or inappropriate planting, hard engineering techniques, such as sheet piling, gabion baskets, concrete channels.
- **Introduction of invasive plant and animal species** – including fish such as zander, the non-native signal crayfish and plants such as Himalayan balsam, and Japanese knotweed.
- **Development within the floodplain** - such as housing, industry, roads and amenity features.
- **Changes in agricultural land use** – changes in agricultural land management have contributed to the reduction in the wildlife value of riparian habitats. Issues include chemical runoff, soil erosion, stock grazing and watering, bank side land management.
- **Recreation** - rivers and streams form the focus of many recreational activities including angling, boating and walking. These activities can, if unregulated, result in a degradation of the habitat
- **Lack of information** – there is a general lack of information relating to different habitats within river systems. Little is known about the importance and location of features such as exposed riverine sediments and deadwood, which have in the past have been routinely removed.
- **Water Framework Directive** - the Water Framework Directive is a key piece European legislation revising existing water legislation into a new overarching programme to deliver protection of the water environment and improve the quality of all waters including groundwaters, surface waters and associated wetlands. It is likely to deliver substantial benefits for wildlife and the environment.

5. CURRENT LOCAL ACTION

- Agri-environment schemes are providing funding to protect and enhance river and stream corridors. (*Riparian corridors can be defined*

as the continuous area of river, river banks, associated wetlands and linked habitats alongside a river and its tributaries. The corridor may be of varying widths to incorporate related habitats). There are examples of land under the old Countryside Stewardship agreement along the main rivers throughout Warwickshire, Coventry and Solihull. The Blythe, Anker Tame partnership between FWAG, local authorities, the Environment Agency, Natural England and Warwickshire Wildlife Trust is targeting riparian farms to provide financial support to improve their river habitats.

- The latest CAP reforms encourage the buffering of watercourses – Cross compliance is a series of standards that farmers need to meet in order to receive their subsidy payment in full. There are two main elements, Statutory Management Requirements and Good agricultural and environmental condition. As part of good agricultural and environmental condition farmers are required to establish a protection zone along water courses. This must not be cultivated or have fertilisers, herbicides or pesticides applied. It must measure 2m from centre of a ditch, with a minimum of 1m from the top of the river bank.
- Recent river restoration work - examples of schemes which are designed to allow rivers to create self-maintaining in-stream features include Middleton Hall quarry, where Hansons created 500m of braided channel, along the River Tame (and are planning a further 600m), Coleshill Quarry on the River Cole where RMC have created a structurally improved river channel (both with advice from the Environment Agency) and the bank modification work at Kingsbury Water Park (paid for by the Environment Agency). Other schemes include the River Sowe through Longford Park and the river enhancements which formed part of the Hams Hall Power Station re-development.
- Several key wetlands have been formally designated as Local Nature Reserves or Country Parks (see 4.1).
- ‘Water for Wildlife’ has superceded the Otters and Rivers Project with broader aims and is now also looking at water voles and crayfish.
- Coventry River Study - the monitoring/recording of various invertebrate groups and birds has been taking place at certain key stretches of watercourse through the activities of Warwickshire and Coventry Museums and amateur naturalists.
- The periodic review of water company prices and investments (the AMP process) will lead to improvements at several sewage works in this sub-region. Improvements include nitrate removal, phosphorus stripping, and the installation of secondary or tertiary treatment. It will certainly lead to significant reductions in pollution to rivers in many parts of the area.
- The Environment Agency is currently monitoring the flow on a number of watercourses in Warwickshire. In the future flows may be supplemented where necessary. Catchment Abstraction Management

Strategies (CAMS) will provide a consistent and structured approach to local water resource management. CAMS will eventually cover all catchments in England. In Warwickshire CAMS for the Avon Catchment is currently in preparation and process is beginning for the Tame, Blythe, Anker, and Cole catchment.

- The Environment Agency carries out monitoring of watercourses throughout Warwickshire as part of the General Quality Assessment scheme (GQA).
- The Environment Agency, all Local Authorities and Severn Trent Water have a statutory duty to further conservation through their work.
- Environment Agency Consents (Land Drainage, Abstraction, Discharge, etc.) are assessed for their impact on the aquatic environment. Applications are modified as appropriate to ensure that they do not adversely impact upon the environment. Wherever possible enhancements are incorporated into any plans.
- The Leam Water Pilot Catchment Project (part of the Voluntary Initiative) aimed at providing services to help farmers reduce pesticide losses from fields to watercourses, and appears to be successful.
- Waterways Birds Survey (WBS 1974-present) – grey wagtail, dipper, kingfisher, goosander, little grebe, sand martin, mute swan, reed warbler & common sandpiper. 100 sites mapped each year. Coordinated by the BTO.
- Waterways Breeding Bird Survey (1998 as pilot – present). Matches survey method used by EA River Habitat Survey. Coordinated by the BTO and funded by EA, also with support from Severn Trent.

6. PROPOSED LOCAL ACTIONS (some dates amended – Core Steering Group – Feb 2008)

ACTION	Lead	Partners	By	Meets objective
Policy & Legislation				
PL1. Ensure that all relevant habitat policies are included in Local Planning Documents (see ODPM Planning Policy Statement PPS9).	LBAPSG	LAs	2005-2015	A
PL2. Ensure that any site meeting the relevant criteria is considered for designation as an SSSI.	NE		2005-2015	A
PL3. Review and renotify all qualifying water courses as SINCs and enter onto database.	WSP		2007	A

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PL4. Encourage the creation of a funding scheme available for watercourse / corridor improvement projects.	EA	STW TW WCC NE	2006	B,C, F
PL5. Promote the use of Sustainable Urban Drainage Schemes in all new development.	EA	WWT LAs NE	2005- 2015	F
PL6. Actively work with partners and agencies to ensure that all flood defence works result in an overall environmental gain to aquatic and riparian habitats.	EA	WCC LAs	2005- 2015	B,C,D,E
PL7. Actively encourage that all statutory Permissions and Consents where possible enhance the environment and as a minimum do not cause an adverse impact on the aquatic environment.	EA	LAs WCC	2005- 2015	B,C,D,E
Site / Species Safeguard & Management				
SM1. Actively work with partners and agencies to ensure that development proposals do not affect the integrity of watercourses.	LBAPSG	WWT EA LAs	2005- 2015	B,C
SM2. Determine priority sites for water course/corridor improvement schemes.	EA	WWT TW FWAG RSPB LAs STW	2006	F
SM3. Actively work to ensure that flow levels are sufficient to sustain characteristic habitats and species.	EA	EA TW STW WWT	2005- 2015	B,C,D
Advisory				
A1. Inform landowners of any special interest attached to streams and rivers they control.	FWAG	EA NE WWT RSPB	2005- 2015	E
A2. Make landowners aware of sources of information, advice and grants in relation to best practice for water course/corridor management. Encourage landowners to enter into Environmental Stewardship agreements.	FWAG	WWT EA RSPB	2005- 2015	B
Research & Monitoring				
RM1. Establish appropriate survey and research work to define priority sites and identify potential opportunities.	WSP	EA NE WWT	2006	E

RM2. Establish an accurate database on the county's key water courses/corridors to be transferred to GIS when available.	WBRC	EA WWT	2007	A
RM3. Review the monitoring of key species and seek to address any gaps in monitoring requirements.	WBRC	WMBC BC EA RSPB	2006	C, D
Communication, Education & Publicity				
CP1. Increase public awareness of the importance of, and threats to rivers, streams and their corridors and the need for conservation action.	WWT	NE EA FWAG STW TW	2005- 2015	B
CP2. Organise and deliver management training days to relevant landowners in order to illustrate best management techniques.	FWAG	NE EA RSPB WWT	2006	B
CP3. Raise profile of rivers, streams and their corridors in the county by appropriate local publicity around surveys and advice.	WWT	FWAG	2005- 2015	B

Abbreviations: BC – Butterfly Conservation, EA - Environment Agency, NE – Natural England, RSPB – Royal Society for the Protection of Birds, STW Severn Trent Water, TW – Thames Water, WBRC – Warwickshire Biological Record Centre, WCC – Warwickshire County Council, WM – Warwickshire Museum, WMBC – West Midland Bird Club. WSP – Wildlife Sites Project, WWT – Warwickshire Wildlife Trust.

7. REFERENCES (see LBAP Bibliography web page)

8. FURTHER INFORMATION (see separate Links web page for links to web sites)

UK Biodiversity Action Plan no.59

Severn Trent Water Biodiversity Action Plan (1999)

Natural England

Environment Agency

Department for Environment, Food & Rural Affairs

Warwickshire Wildlife Trust

Leam Water Pilot Catchment Project

Forests & Water Guidelines, Forestry Commission (2003)

Farming & Wildlife Advisory Group - information on the new Environmental Stewardship agri-environment scheme. Tel.01926 318280 or email: warwickshire@fwag.org.uk

Flora Locale advisory notes: *Planting near Watercourses* and *Buying Native Flora*.

Website: www.floralocale.org or send large A4 SAE stamped for less than 100mg to: Flora Locale, Denford Manor, Hungerford, Berkshire, RG17 0UN

Staffordshire Wildlife Trust booklet: *Managing woody debris in rivers, streams & floodplains*. Tel. 01889 880100 or from website: www.staffs-wildlife.org.uk

9. CONTACTS

Giles Matthews, Biodiversity Officer (Lower Severn):- Riversmeet House, Newtown Industrial Estate, Northway Lane, Tewkesbury, Gloucestershire, GL20 8JG giles.matthews@environment-agency.gov.uk