

Managing the River Misbourne

The Chilterns Chalk Streams Project (CCSP) aims to conserve all major chalk streams in the Chilterns Area of Outstanding Natural Beauty and to encourage enjoyment and understanding of them.

The Project achieves these aims by:

- **Raising awareness** of the importance of chalk streams and the need to conserve them
- **Giving advice** to landowners and managers on riverside management
- **Practical conservation** to physically improve chalk stream habitats, assess habitat quality and locate and protect rare species
- **Providing education resources** for schools to help children understand the chalk stream environment
- **Improving physical access** to the streams where appropriate, and providing information about their special qualities

Useful contacts:



Misbourne River Action is a local community group that aims to revive the River Misbourne so that it flows regularly throughout its length. The group holds regular work parties and welcomes support from volunteers, community groups or local businesses. To find out how you can help visit: www.misbournriveraction.org



ENVIRONMENT AGENCY

Environment Agency

Apollo Court
2 Bishops Square Business Park
St. Albans Road West
Hatfield Herts AL10 9EX
www.environment-agency.gov.uk

Tel: 08708 506506
0800 807060 (Incident hotline)



Chiltern Society

White Hill Centre White Hill
Chesham Bucks HP5 1AG
www.chilternsociety.org.uk

Tel: 01494 771250



Chiltern District Council

King George V Road
Amersham Bucks HP6 5AW
www.chiltern.gov.uk

Tel: 01494 729000



South Bucks District Council

Capswood, Oxford Road
Denham Bucks UB9 4LH
www.southbucks.gov.uk

Tel: 01895 837200

Chilterns Chalk Streams Project
Chilterns Conservation Board
The Lodge 90 Station Road
Chinnor Oxon OX39 4HA
Tel: 01844 355500 Email office@chilternsaonb.org



Led by the Chilterns Conservation Board, the Chilterns Chalk Streams Project is a partnership of statutory agencies, local authorities and voluntary bodies committed to conserving the chalk stream environment.

www.chilternsaonb.org



How YOU can help

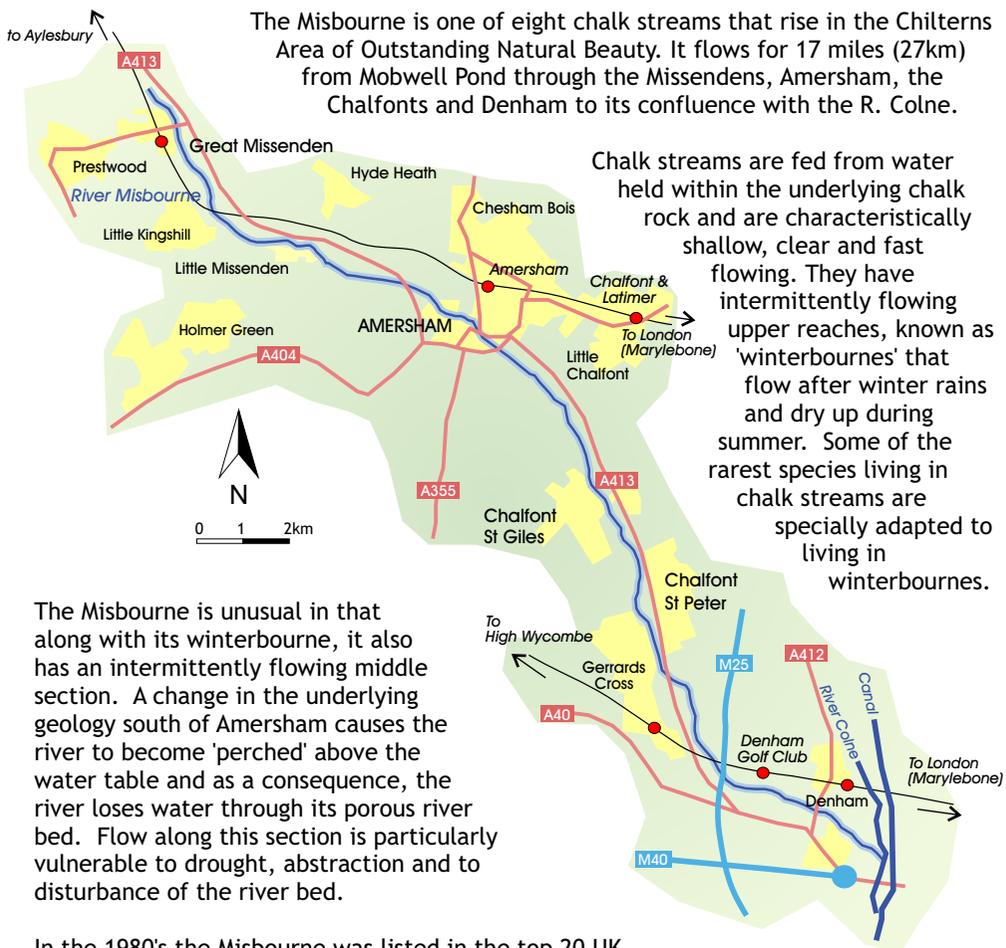


an Area of Outstanding Natural Beauty

Why is the River Misbourne so important?

The River Misbourne is a chalk stream. Chalk streams are a globally rare habitat, confined mainly to England and North West Europe. They are home to a wide range of wildlife, including some of the UK's most threatened species.

The Misbourne is one of eight chalk streams that rise in the Chilterns Area of Outstanding Natural Beauty. It flows for 17 miles (27km) from Mobwell Pond through the Missendens, Amersham, the Chalfonts and Denham to its confluence with the R. Colne.



The Misbourne is unusual in that along with its winterbourne, it also has an intermittently flowing middle section. A change in the underlying geology south of Amersham causes the river to become 'perched' above the water table and as a consequence, the river loses water through its porous river bed. Flow along this section is particularly vulnerable to drought, abstraction and to disturbance of the river bed.

In the 1980's the Misbourne was listed in the top 20 UK rivers most affected by abstraction. In 1998 a low flow alleviation scheme was implemented, reducing abstraction from pumping stations in the Amersham area by nearly 50%. This scheme has helped to increase flows above Amersham. A second phase of work is now being considered to improve flow in the middle part of the river.

Although altered by many centuries of human activity such as milling, watercress growing, ornamental landscaping and abstraction for public water supply, the Misbourne is still a valuable habitat. Follow the advice in this leaflet to help manage your riverside land sympathetically for the benefit of wildlife.

A haven for wildlife



Wild Brown Trout (*Salmo trutta*)

Chalk streams like the Misbourne are particularly important for wild brown trout. Trout thrive in the pure, oxygenated water and use the clean gravel bed to spawn during winter.

Mayfly (*Ephemera danica*)

Mayflies are a characteristic insect of chalk streams. Much of their life is spent as larvae living in burrows in the riverbed. In late May however, they rise to the surface en masse and hatch into the beautiful adults, which live for only one day.



Water Vole (*Arvicola terrestris*)

Water voles are Britain's most endangered mammal, having declined in numbers by over 90% in the last 15 years. They can be distinguished from rats by their chubbier appearance, small ears and much shorter, furry tail. Water voles are present along the lower Misbourne.



Undesirable species

American Mink (*Mustela vison*)

Introduced into Britain in the 20th Century, mink have proved significant predators of our native wildlife. They hold territories along waterways and have considerable impact on water vole and wildfowl populations. Advice on mink control can be sought from the CCSP and BBOWT.



Signal Crayfish (*Pacifastacus leniusculus*)

Originally introduced through the aquaculture trade, signal crayfish have quickly spread in the wild. They have contributed to the drastic decline of the native white-clawed crayfish, out-competing them and spreading crayfish plague. They can also cause excessive erosion by burrowing into riverbanks.

Japanese Knotweed (*Fallopia japonica*)

Japanese knotweed was introduced to Britain in the mid-19th Century. It grows aggressively, particularly in damp conditions and can tolerate a wide range of soil conditions. It forms large stands, shading out native vegetation and can cause flooding, structural damage and reduced land values.



As a landowner or manager your actions can greatly enhance the habitats and wildlife of the River Misbourne and its valley environment

Undesirable Practice



Mowing

Mowing up to the river edge (picture 1) removes vegetation and habitats for many native species that live in the river or along the banks. Unsympathetic management of your land such as manicuring and the use of pesticides can seriously affect local populations of garden birds, mammals, amphibians and insects.



Bank modification

Banks modified with rockery stone or wood boarding have little value for wildlife (picture 3). They reduce cover provided by natural marginal vegetation and destroy water vole habitat. As a rule soft banks and marshy margins are best for wildlife (picture 2). Sometimes, banks need to be reinforced to combat erosion. Wildlife friendly techniques exist to provide bank protection and enhance existing revetment. Contact the Project for further advice.



Winterbourne and perched sections

Where the river is dry for several months of the year it may be tempting to use the riverbed; to store materials, as a fire site, or even as a source for soil. The river bed should not be used for these purposes. It is illegal to dump rubbish or obstruct the river channel, even when it is dry. Along perched sections, damage to the riverbed caused by activities such as dredging can lead to it becoming more 'leaky', leading to loss of flow.



Non-native plants

Avoid planting rivers and their banks with non-native species (picture 5) as they can suppress our native species and reduce wildlife diversity along the river. Plants such as Himalayan balsam, Japanese knotweed and floating pennywort have all been released into the wild through horticulture and are now causing great damage to river habitats throughout the UK.



Tipping

Dumping of garden waste and other rubbish into the river or onto banks is unsightly, damaging and dangerous. It smothers valuable habitat, causes pollution and encourages the spread of undesirable species. It can also create a flood risk. Dispose of waste properly. Garden waste should be composted away from the river bank or removed to your local green waste recycling centre.

In your garden



1



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4



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Good Practice



Riverbank management

If your garden abuts a watercourse, leaving undisturbed habitat along riverbanks will greatly increase its value for wildlife. Removal of tall vegetation is best undertaken from the late summer through winter. Try to leave uncut areas to act as refuges for insects and cover for mammals (picture 2).



Trees

Leave occasional overhanging branches and mature trees as perching sites for kingfishers. Aim to create dappled shade as this will encourage marginal vegetation. Old trees with cavities provide roosting sites for bats and nesting sites for birds - try to retain these where it is safe to do so.



Woody debris

Avoid being over tidy. Unless it is presenting a flood risk, leave some dead wood in the river and on the banks. This wood will provide ideal habitat for invertebrates and can help to provide spawning habitat and cover for fish.



Weed management

Aquatic plants like water crowfoot (picture 4) are an essential feature of chalk streams. They provide food and shelter for many species and also help to maintain flow velocity and water depth during summer. If weed cutting is necessary, avoid clearing the entire channel. Also avoid heavy autumn cuts as these are particularly harmful to wildlife.



River Law

The River Misbourne, like all rivers, is protected by legislation. As a riparian landowner you have both rights and responsibilities. Modifications to the riverbed, banks or works within 8 metres of the river, including the siting of new structures, are subject to Environment Agency approval. Stocking of rivers with fish also requires Agency consent. Don't risk breaking the law. If you are in doubt contact the Environment Agency for more information.

Undesirable Practice



Diffuse pollution

Applications of fertiliser and pesticide close to the river are harmful to wildlife. Away from the river, surplus agro-chemicals can build up in the soil and groundwater or are washed into watercourses by rainfall. The use of buffer zones or a change to less intensive farming adjacent to the watercourse can provide protection.



Open grazing

Open access to riverbanks by stock (picture 7) causes poaching and damage to the banks. It can lead to the loss of water vole habitat through destruction of marginal vegetation, impede river flow and increase siltation, smothering gravels needed by spawning fish and aquatic invertebrates.



Cultivation

Soils washed from fields by rain can pollute the river and smother the gravel bed. Ploughing with the slope exacerbates this problem. Buffer strips can intercept run-off and prevent soil from reaching the watercourse as can ploughing across the slope.



Dredging

Dredging of the river to remove silt or for flood prevention should be avoided. Dredging destroys the natural bed of the river, damages habitat and increases siltation (picture 9). Where there is a flooding issue, contact the Environment Agency to discuss a sustainable solution to the problem.



Hedges

Hedges provide valuable complementary habitat along the river valley and more widely. Flailing hedges during the bird breeding season (March to August inclusive), reduces the vital protection for hedgerow species of birds. Cutting back the hedge in one go in winter removes berries, nuts and vital protection for winter birds. Try to stagger hedgerow management from October to March and ideally cut back once every three years.

On the farm

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8



9



10



Good Practice



Buffer zones

Establishing grass and herb-rich margins of at least 3 metres width adjacent to watercourses helps stabilise riverbanks (picture 6) and provides habitat for water voles, plants and insects. The wider the field margin, the greater the capacity for reducing the impacts of agro-chemicals and soil erosion on the river. Even better is the conversion of arable areas to pasture alongside the river.



Winterbourne section

Even when the winterbourne sections have dried up they should be treated as if they are still part of the flowing river. Vegetation in the channel should be left uncut and a buffer zone along each bank should be maintained. Even along sections that have not seen flow for several years, it is vitally important to retain the channel in good condition for when flow returns.



Fencing

Fencing parallel to the river, (picture 8) keeps cattle from poaching the banks and allows the growth of marginal and emergent vegetation, helping to maintain a narrow fast flowing river. Fencing should be at least 3 metres from the river's edge. If access to water is necessary for stock, cattle drinks or powerless pumps can be used.



Pollarding and Coppicing

Bank-side trees such as willows and alder can be maintained by pollarding or coppicing (picture 10). Coppicing and pollarding encourages healthy tree growth, increases light to the river which is important for healthy growth of aquatic plants and helps to extend the life of the trees. Tree work should be carried out between October and March.



Grants

Consider entering riverside land into an agri-environment scheme. Such schemes can provide funding to help create buffer zones, install fencing, carry out tree work and even fund capital works such as river channel restoration.



River flow

As landowner you have a responsibility to pass on flow without obstruction, pollution or diversion that affects the rights of others. To find out more about your rights and responsibilities, contact the Environment Agency for a copy of their publication 'Living on the Edge'.

For further help, practical advice or information on land management issues

please telephone the Chilterns Chalk Streams Project on 01844 355500 or email office@chilternsaonb.org