

Streamside woods and meadows in the Bevern catchment



For some years now I have been involved in The River Ouse Project, which started 12 years ago at the University of Sussex. Every year since then, a small team of volunteers have surveyed the vegetation of gills (wooded valleys in the upper catchment), wet woodlands and meadows along the many tributaries of the upper Ouse. We go out on Wednesdays and most Thursdays from April to July, and then spend the rest of the year analysing the data and writing reports. We have just completed Report No. 9 on The Bevern, the tributary that runs through Plumpton and East Chiltington and has many small tributaries of its own. We are grateful to all the landowners who have shown an interest in the project and welcomed us on to their streamside land, most of which is not accessible to the public. We send them the results of our surveys and the relevant reports. On only two occasions in the history of the project have landowners refused us access. Sadly, both were in Plumpton.

What started this project? It came into being because of two main concerns. First, there has been a massive loss of traditional flower-rich meadows, despite the 1995 UK Biodiversity Action Plan target of no further losses of this habitat. This is of concern because the decline of our native bumblebees and other insects that are essential crop pollinators, particularly early in the year when hive bees are inactive, has been linked to the decline in flower-rich meadows. And the lack of these meadows also affects other insects, as well as the birds and bats that feed on them.

In the past, before widespread farm mechanisation, the best land was used as hay meadow and there were extensive hay meadows and pastures all along the middle Ouse. Wild flowers, such as cowslips and oxeye daisies, grew in profusion, and the air was full of butterflies and bees. Now only small fragments of this habitat remain. The linear landscape along the tributaries of the Ouse provides a wonderful opportunity for reconnecting these fragments through grassland enhancement of suitable sites. This can be done where the soil fertility is low by planting wildflower plugs and sowing local wildflower seed.

The second concern is the serious flooding that can occur downstream in places such as Lewes. The Ouse is a 'flashy' river, which rises quickly after prolonged heavy rain and then soon subsides. It has a wide catchment, with a large number of streams, many of which become dry in the upper reaches during summer. Rain falling at the end of a dry period is absorbed at first, but once the ground becomes saturated, any extra rainfall causes rapid flows and the result is a rise in water level in the main Ouse. In the past, the water spilled onto bordering land, resulting in short-lived floods. But navigation works on the Ouse between 1790 and 1799 and the deepening of streams to drain agricultural land reduced the amount of land available to 'flash flooding'. This has led to destructive flooding of farmland, homes and businesses further down the river.

A flood alleviation strategy for the Ouse depends on holding back the peak flow temporarily in the upper reaches until water from lower down the system has passed through. Reinstating 'flash' washlands is key to this, and the traditional hay meadows can serve this role because their particular vegetation composition can tolerate short-duration flooding. Stream-side woods are also important in holding back flow because woodland absorbs rainwater. Creating debris dams can also help by holding back water for a time. A South-East Water project has the Bevern as one of its pilot areas, and hopes to demonstrate that changes in land use can lead to significant reduction in run-off into the river system. Not only would this help prevent the risk of flooding, but it would also reduce the input of agricultural pesticides and sediment into the water.

Our report gives details of all the sites surveyed and makes suggestions on land use changes that could improve biodiversity, help conserve pollinating insects and reduce the risk of destructive flooding. It is available to download [here](#).

Further details of the project are at: <http://www.susex.ac.uk/riverouse>.

Jacqui Hutson