

Hurst Water Meadow Trust - Dorchester-on-Thames

The rivers Thame and Thames

The river Thame is a small stream with not much flow, but it drains all the run-off up to the Chilterns, Aylesbury, Whipsnade zoo etc. If the airport at Wing (near



Aylesbury) had been built, the run-off would have doubled the flow down the Thame and it could not have taken it. Even doubling its depth would not have been enough. Run-off is affected by the quantity of rainfall, the area of hard surface such as roads, houses and concrete, farming methods, and the extent of waterlogging of the soil. Rain spread over time, and melting snow are more likely to soak in and raise the level of the water table and replenish aquifers, than heavy downpours.

The local effects of climate change are unpredictable, but one fact is clear: any rise in atmospheric temperature will make it more energetic, so we can expect surprises. After a period of heavy rainfall, and usually in January or February, the land becomes saturated and the river cannot take the flow, so the level rises and covers the flood plain. Rivers need large areas of flood plain as reservoirs to give extra capacity.



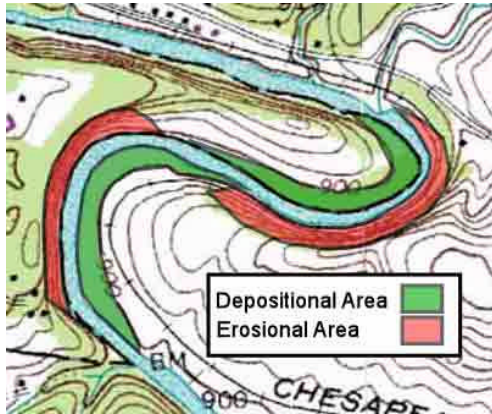
Flooding does not happen every year, but in Jan 2003 the water level was within six inches of the top of this gate, so the meadow would have been covered in at least a metre of water. In times of flood, the water flows rapidly down the channels causing erosion of the banks, but flows very sluggishly over the meadow. This benefits the meadow by giving a good crop of grass for grazing animals in the spring – spring flush – and wild flower seeds are carried down from flood meadows upstream.

This flood meadow is part of the Overy Mill water management system. The Mill has been present since the eighth century (one of three in Dorchester) and was grinding grain until the 1920s, and could be got going again, but probably to generate electricity rather than grind corn.

For many centuries, the locally grown corn was milled here to provide flour and bran. The flour was used by villagers to bake their bread, and the bran to feed horses. It was also spread on the floor of pubs to mop up the mud and horse-dung that people brought in on their feet from the muddy lanes which were covered with dung from horses. In towns with paved roads, this could be a foot deep, and 'crossing sweepers' kept a way clear for pedestrians. In pubs, people coughed and spat a lot, usually on to the floor. So much for the 'good old days'!

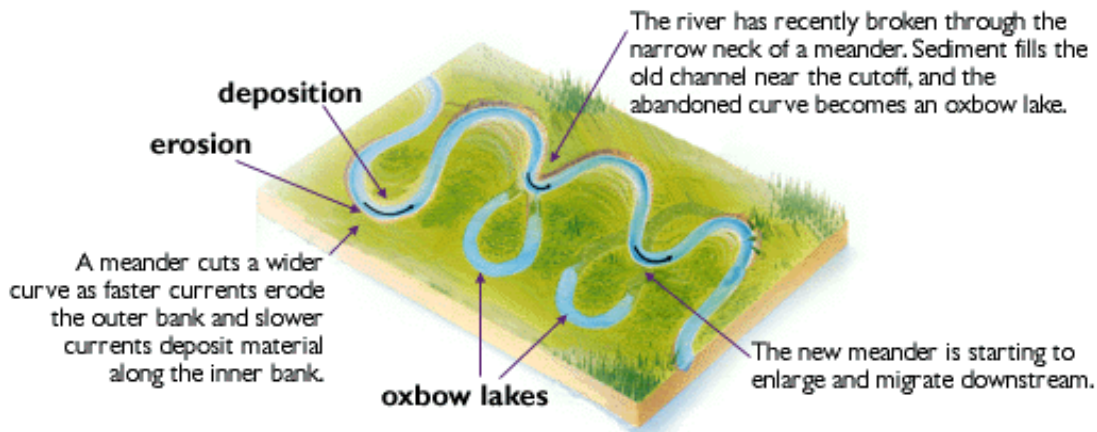
The water from the millstream flows down to the mill, and its flow can be increased in summer by putting boards in the sluice above Buck Pool. Flow can be reduced when the river level is high by putting boards in the mill, or diverting water from the mill race into the back drain which runs into the mill pool, or across the meadow into the main river.

The water flows through a narrow channel below the mill in which the mill wheel would lie. The wheel was an open drum with boards across the outside rim to catch the flow of water beneath the wheel. (In some mills the water flowed on to the top of the wheel.) The axle of the wheel provided power for the grindstones. The water then flows into the mill pool and the millstream before rejoining the river above Dorchester Bridge. The stream then pursues a winding course to the River Thames, less than a mile away.



The erosion caused by the millstream has been a problem for the Hurst meadow, as a 'meander' formed which eroded the bank severely, by about a metre in every flood. This happens because the flow is faster on the outside of the bend which becomes more vertical and erodes faster. The silt is deposited on the inside of the bend, where the rate of flow is less. We took action by driving in live willow stakes, which took root and consolidated the bank. Meanders tend to get worse until they become a circle (oxbow) and this can lead to an 'oxbow lake'. That has

not happened yet. Crack willows are often allowed to grow along river banks to stabilize the flow.



A short walk down the bank of the Thame to where it joins the Thames shows its winding course, but no oxbow lakes yet. The towpath is on the village side, and can be followed upstream to Day's Lock. Locks are needed to allow boats to go uphill or downhill. Across the river Thames, a short climb leads to Wittenham Clumps (an ancient Iron Age fort to guard the river) and Hill Farm, part of the Northmoor Trust's 300-hectare nature reserve. It houses the Timescape Project, an educational resource that uses virtual reality to demonstrate changes in the landscape over time. (www.projecttimescape.co.uk)

The river Thames arises near Kemble in Gloucestershire, and is non-tidal above Teddington Lock. Much water is extracted for Didcot Power Station and Farmoor Reservoir.