

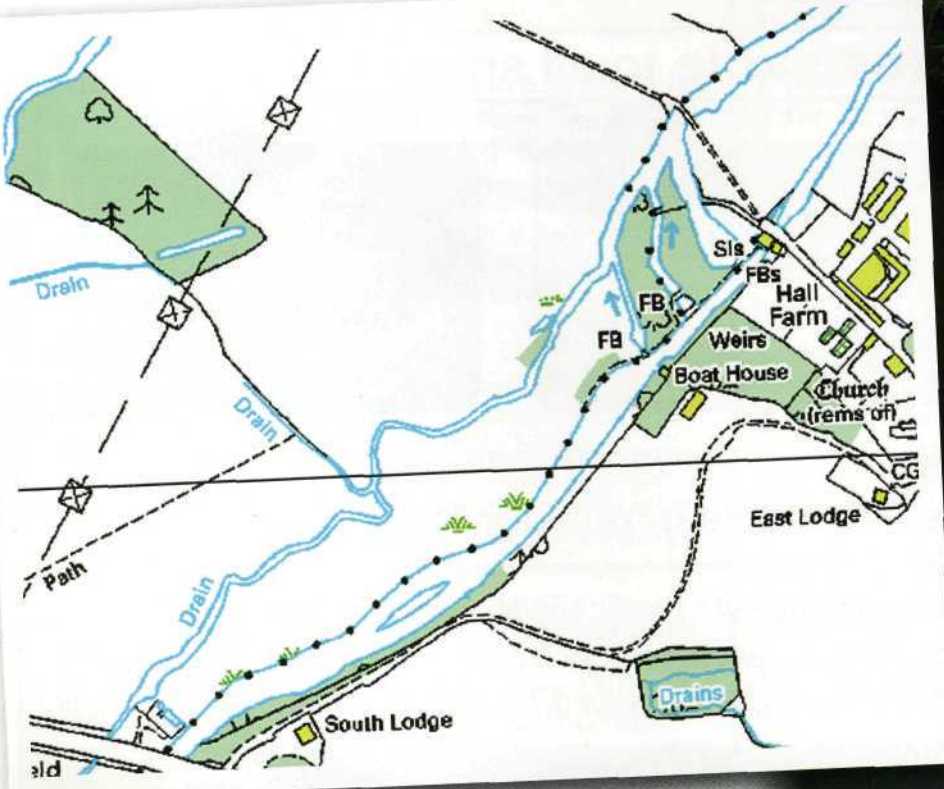
Many of our rivers have suffered badly over the years at the hands of engineers who seem to think that the only proper form for a river is a straight, trapezoidal channel, maybe with some bunds to make sure the river stays put.

A number of serious floods in the 1940s and 50s led to a spate of major re-engineering of rivers and the process continued well into the 1980s. The straightening and dredging of river channels caused enormous ecological damage and generally caused a huge drop in fish biomass. The Loddon is no exception. It has suffered much in the past so it was interesting to find that the Environment Agency (EA) was considering a series of works to restore some stretches of the river

by lowering river control structures, creating a fish and wildlife bypass channel around the weirs, providing new spawning and nursery habitat and improving wet woodland and reed beds. The stretch at Arborfield came to the attention of the Loddon Fisheries and Conservation Consultative (LFCC) and it was clear that urgent remedial action was needed to restore the river and its flows.

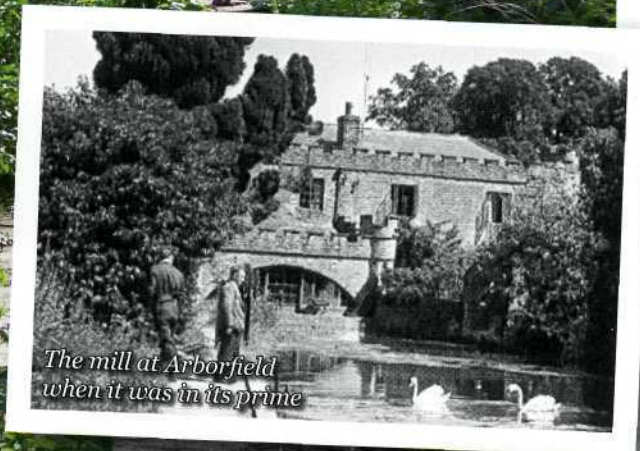
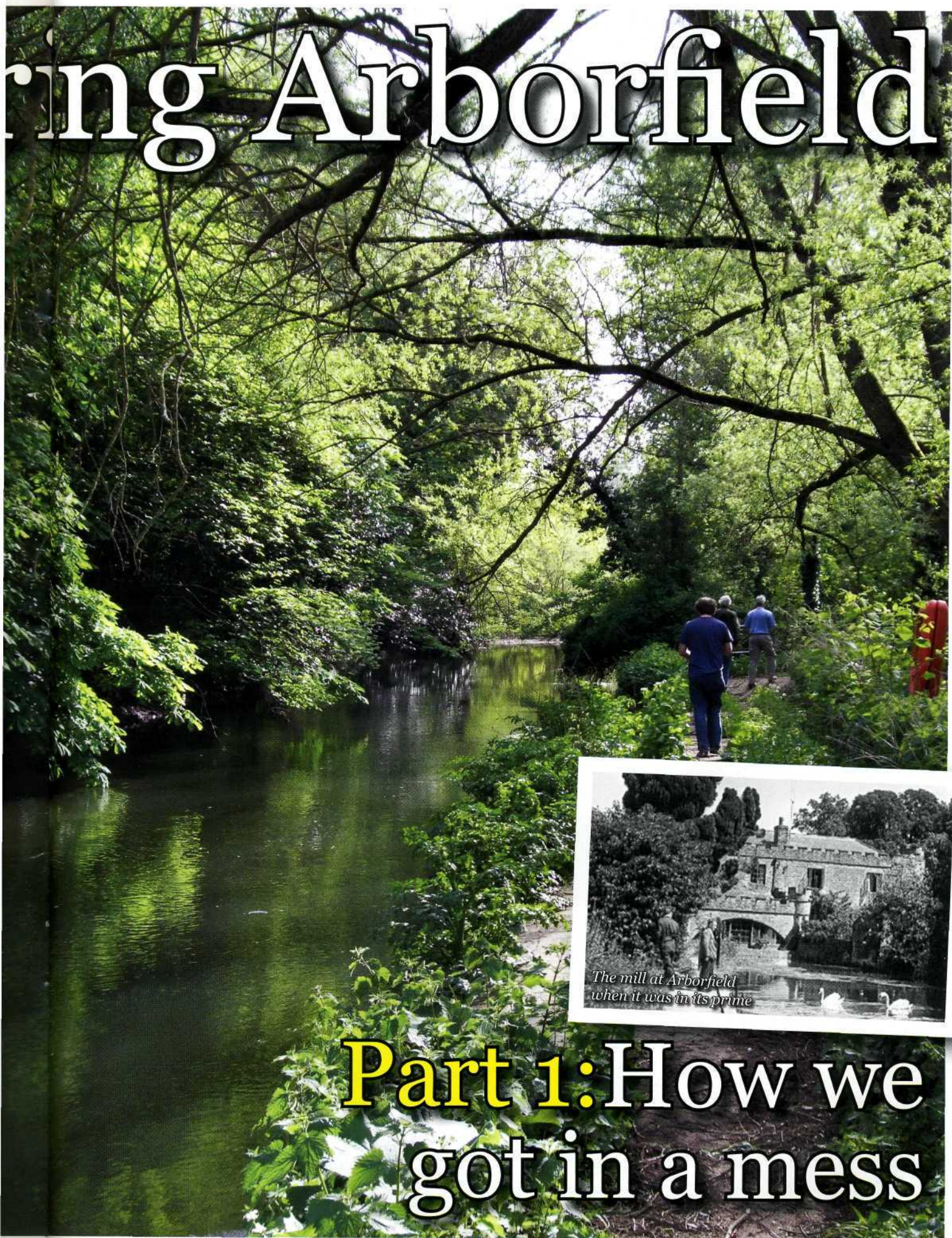
If you walk the right hand bank, nothing looks unusual. Sure, the Loddon is not in

Restori



A suspiciously straight river Loddon at Arborfield.

ring Arborfield



The mill at Arborfield when it was in its prime

Part 1: How we got in a mess

great ecological condition at Arborfield, but it still looks a promising barbel stretch. It might look a little straighter than one might expect but that is about all.

However, if you walk the left hand bank, something strikes you as very odd; the river is above you! Rivers do not do this naturally and this “perched” river is the result of some radical

engineering which moved the entire course of the river away from its original course. The reasons for

doing this are not that clear as it took place some decades ago, but it probably has something to do with a

the operation of a mill on the site and the drinking water offtake which is now operated by Thames Water.

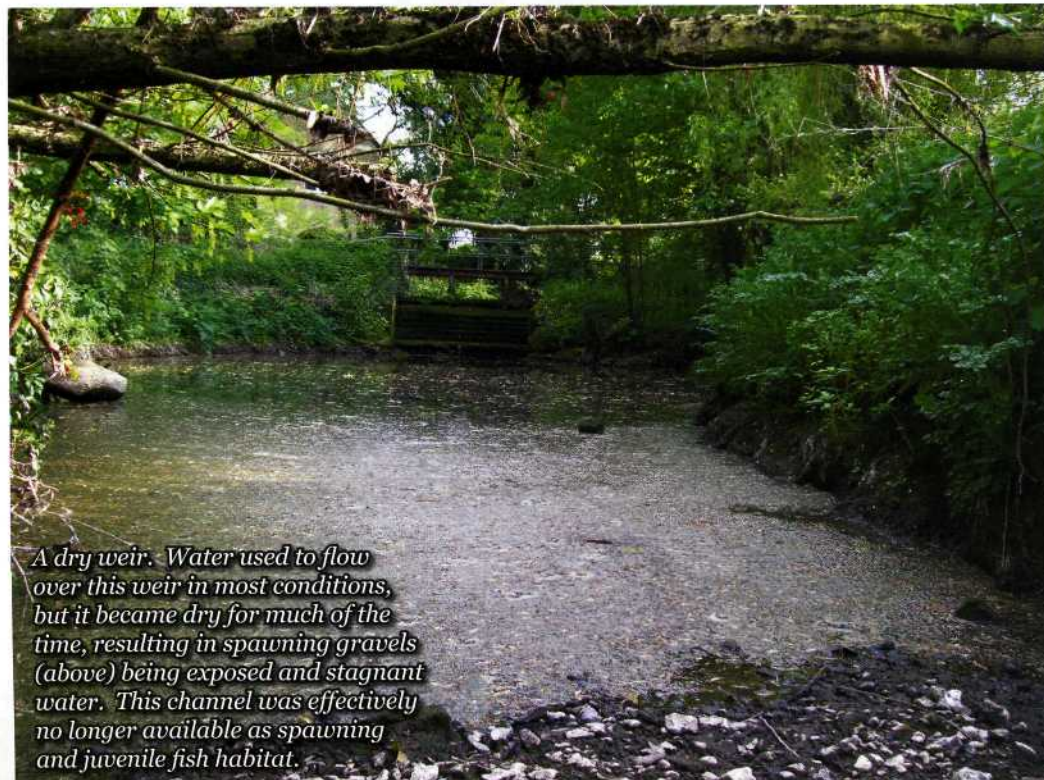
“Unfortunately, Thames Water took the quickest and easiest course of action and just lowered water levels by about 30cm. This was not good for the fish or the fishery!”

The Study Site

The study reach stretches from the weirs at Hall Farm, Arborfield to the confluence between the River Loddon and its main tributary, the River Blackwater. The weir complex at Hall Farm near Arborfield dates back to the 16th century when the weir pool supplied eels to the bishops of Salisbury. From 1787 it powered a paper mill and the site is now used by Thames Water Ltd. (Arborfield Local History Society).

The weirs create a significant barrier to fish migration and have restricted the natural flow of the river impounding it to a distance of nearly 5KM upstream, beyond its confluence with the Blackwater. The resultant reduction in stream energy is reflected in the upstream fish populations that show a reduced diversity and a lower density of rheophilic species than that found downstream of the weirs.

If you take a river away from its natural course, the first thing it will try to do is to get back to where it “should” be, that is, where the forces of nature send it. For that reason, regular maintenance of engineered water courses is important to ensure that they do not succeed in breaking out of their modified channel which can result in sudden and possibly catastrophic flooding. For many years, there was a manager living on site who would maintain all the sluices and gates at a height to suit the flow and



A dry weir. Water used to flow over this weir in most conditions, but it became dry for much of the time, resulting in spawning gravels (above) being exposed and stagnant water. This channel was effectively no longer available as spawning and juvenile fish habitat.

keep water levels under control. He also organised maintenance on the bank side to keep vegetation and trees in good order. When the live-in manager was withdrawn, river levels were not controlled properly and this led to some bank erosion upstream. When the EA found this and realised it posed a risk of flooding including an important A road, they asked Thames Water to rectify the situation. Unfortunately, Thames Water took the quickest and easiest course of action and just lowered water levels by about 30cm. This was not good for the fish or the fishery!

It was at this point that LCFF got involved after a plea for help from Arborleigh Angling Club (AAC) which controls the fishing on the stretch. They were very worried about the impact of lowered water levels on the fishery. LFCC carried out a site visit to see the effects and decided that urgent action was needed to put things right. It was not only the fish which were at risk; there was also a risk to the wet woodland which is a rare and threatened habitat in the

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Loddon catchment. Some idea of the problems can be seen below.

In some places, there was no water but in the main pool below the weir, there was too much flow. With less water going through the other channels, most of it went through the main pool making flows much more aggressive than previously. This flow concentration dried up other spawning channels and EA surveys had showed that the tails of the pools had been important

habitats for juvenile fish. Clearly, something had to be done as the combination of loss of spawning gravels and juvenile habitat would have led to a critical reduction in recruitment at the site. Given that the Loddon has lost many key spawning areas due to engineering works over the years, the last thing we wanted to see was the loss of yet more such areas.

So, what was to be

done? The first step was for LFCC to write to Thames Water asking them to take remedial action. We politely pointed out that they had a legal obligation to do this but they really did not take much persuading and soon not only came up with the funds but got to work pretty quickly. Naturally, we kept the Barbel Society informed of developments though Pete Reading. Something interesting was hatching though as the EA Loddon fisheries officer, Dominic



Looking uphill towards the Loddon!

Martyn had more ambitious plans to restore the river, re-establish the spawning gravels and the juvenile habitat and so improve the ecological condition of the site, notably by restoring

water across the site.

Dominic’s plans involved much more funding and a lot more work, more details of which will be given in the next article, “how things got put right”.

Lion Cottage

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