

Water Management in Lye Valley, an Update

J A Webb July 2018

The north fen area of the Lye Valley SSSI & LWS is in the throes of a big water management project.

Historically the central Lye Brook has had terrible erosion of the banks to the fen by flash flooding after rainstorms. This has caused damaging drying out of the adjacent fen as well as the loss of peat. When the housing estates nearby were built from the late 1920s, increasing amounts of road run-off water were directed into the brook at the head of the valley via a Thames Water 600mm diameter surface water sewer. This gathers road, roof and paving water from a huge area of the city stretching out to the ring road and beyond Bury Knowle Park – much bigger than the natural water catchment of the Lye brook (which was calculated in 2007 by Curt Lamberth).

On **Saturday 25th June 2016** there were **three intense rainstorms** in the Lye Valley of about 15 minutes each while Judy Webb was surveying. She took this video of the Thames Water surface drain emitting at nearly full bore immediately after only the second rainstorm around 1pm. Illustrates the volume and full erosive power/energy/speed of the run-off water the north fen site has to endure at present. Have the sound on and listen to the roar. A lucky chance to capture images of such a peak event. This was added to a vastly increased run off from the Town Furze estate side to the Lye brook (pipe not shown here and just a few metres away) contributing to high volume fast flow through the north fen LWS and SSSI areas. In dry weather this drain emits virtually nothing.



Photos of the Thames Water Drain in dry weather (left) and in full flow after rain on 25.06.2016 (right)

If you want to see this ferocious flow in action (have the sound on) go to:

<https://goo.gl/onjuDZ> (case sensitive)

By the 1980s, the brook channel had become severely deepened, causing fen drying-out and loss of peat. This erosion was mitigated through funding from Thames Water in the 1980s when hundreds of tons of limestone were put into the brook to raise the bed and two

'balancing' (interception) ponds were constructed at the head of the valley to hold back the peak run-off water. Now these interception ponds are silted-up and non-functional, so erosion continues and all the limestone in the brook bed is being eroded away. After much discussion with Thames Water, OCC and Natural England we (Friends group) have managed to achieve grant funding for de-silting the interception ponds and new big limestone leaky dam which will retain a much bigger volume of water at the head of the valley and release it slowly. We have some grant funding from Thames Water to start this work. After a planning application is approved dam construction can start. Then with flash flooding eliminated, the leaky log dams already installed every few metres all down the valley in the brook channel can be made more impermeable to hold up water and thus re-wet the dry fen adjacent.

In the meantime we have been removing about 10 drainage pipes which were put under the old footpath to help access but which were also draining the life out of the fen. This is all possible because of the installation of £100,000 of recycled plastic boardwalk, which raises walker's feet up out of the wet, meaning the pipes are redundant. Also we are damming up small springs and runnels which are draining out of the fen to retain spring water and re-wet dried peat. Hazel hurdle-type bank repair structures now are in front of the banks and packing in cut reed behind protects the soft peat banks from further erosion. The reed will eventually form new peat to replace that eroded away. Of course the road run-off water is poor quality (contaminated by car products like oil, diesel, petrol and high nutrient from sewage leakage) and without calcium, so we must not allow it to flood up over the low-nutrient fen surface.

Not only will all this work help the SSSI fen by enabling it to be re-wetted. It will reduce flooding of people's homes adjacent to Barracks Lane, Campbell Road and Florence Park – in the flood zone of the Boundary Brook (which the Lye brook joins) beyond Cowley marsh.