

Work on the Interception Ponds at the head of Lye Valley and structures in the Lye Brook October 2020

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The Lye Brook receives a large volume of road run-off water from a couple of storm drains which enter at the head of the valley. This input started in the 1920s and gradually increased as housing estates were built, eventually surrounding the north end of Lye Valley. The resulting flash-flooding from drains after rain caused brook banks of soft peat to erode and the brook base was deeply gouged down, drying out and damaging the rare calcareous alkaline fen habitat next to the brook.



Storm drains emitting road run off at head of the valley after heavy rain Oct 2020



Bank erosion showing loss of peat, 2017

With further city development around the valley this erosion was very serious by the late 1970s. In the 1980s grant funding to Oxford City Council for a number of mitigation actions to reduce damage was achieved from Thames Water. These actions include digging out two ponds within the brook with two log-paling weirs at the pond exits at the head of the valley. These were to hold back some run-off water and this is how they looked when newly dug.



*View up the valley showing the lower of two ponds newly dug, October 1988.
Thanks to Oxford City Council archive for this image.*

Other mitigation actions included putting hundreds of tons of limestone into the brook for a long stretch: this was to raise the brook base and protect it from further erosion

Unfortunately, since 1988 the ponds have gradually been filled up with silt from roads such that they cannot actually hold any water back. They were never dug out. In 2017 a further grant from Thames Water of £10,000 was received by Oxford City Council to de-silt the ponds again, the phase 1 of further mitigation and remediation actions.



Digger begins work 30th Sept 2020, phase 1

Silt dug from the ponds was placed in a safe reception area on the nearby bank up to Warren Crescent meadow.



*Ponds after de silting (looking down the valley)
1st Oct 2020*



*Overview of pond de-silting works from the footpath 1st Oct 2020
Photo T Newsome*

The heavy rain on Friday 1st Oct 2020 meant the digger could not complete all the silt removal from the lowest interception pond. We understand this can be completed within the grant budget another time over the next month. Now we are beginning the re-seeding of all that bare damaged peat and mud chewed up by the heavy digger.



Dragging the green hay cuttings to spread over the chewed up bare peat left by the digger

Seed will drop from the many species in the hay to green up this damaged area quickly next spring.



Spreading the green fen hay over the damaged area next to the de-silted ponds

Further down in the Site of Special Scientific Interest (SSSI) fen section, the brook has been eroded down to more than a metre deep and soft peat was being lost from the banks, resulting in fen nearby being dry and damaged. Grant funding from Natural England enabled the installation of 19 leaky log dams to slow the erosive flows after heavy rain in this area. These went in during March 2018 and have been very effective in reducing the force and speed of run-off after rain, but more are needed. Ultimately, as Phase 3, FoLV hope flows could be slowed enough to raise the water level in the brook to re-wet the adjacent dry peat and restore wet fen next to the brook.



Leaky log dam installation in the SSSI section 20.03.2018

To stop further soft peat being lost from the banks these hazel wattle structures were made by FoLV volunteers to protect the banks from further erosion during high storm flows; but these flows really need to be reduced at source, by retrospectively re-greening the catchment, reducing hard surfacing.



Near the bridge, bank erosion has been stopped by installation of protective hazel wattle structures by FoLV volunteers.

A phase 2 of mitigation actions is being planned now involving many more leaky log dams to be installed in the brook channel within as well as above and below the dammed section in the SSSI. FoLV is putting together a proposal and currently looking for grant funding to pay for the specialist work involved.

J A Webb 18.10.2020