

Stonton Brook Report, Spring 2017

The Stonton Brook catchment was surveyed at eight sites in order to assess the current condition of the system. The survey consisted of the collection and analysis of macroinvertebrate community samples. Macroinvertebrates are widely used as indicators of the condition of the aquatic environment and a considerable number of tools have been developed to enable the use of macroinvertebrate community data in the assessment of many features of aquatic habitats.

As an aid to interpretation, the Walley, Hawkes, Paisley & Trigg Average Score Per Taxon (WHPT-ASPT) index scores were calculated from the aquatic macroinvertebrate data collected. The WHPT-ASPT index is primarily designed to detect organic pollution. Habitat improvements and such changes to adjacent land management as Catchment Sensitive Farming that increase macro-invertebrate diversity will also be reflected in increasing WHPT-ASPT scores. LIFE (Lotic invertebrate Index for Flow Evaluation) and PSI (Proportion of Sediment-sensitive Invertebrates) scores were also calculated to provide measures of the flow conditions and the quantity of fine sediment present on the river bed respectively. Decreasing LIFE scores are indicative of increasingly low flows, whilst decreasing PSI scores demonstrate increasing fine sediment load on the riverbed.

The location of the survey sites within the Stonton Brook catchment and the results of the index calculations are presented on separate maps for WHPT-ASPT, LIFE and PSI. From these data, the following conclusions can be made:

General conclusions

- In comparison to the spring 2016 data, the most recent data indicates that water quality, flow condition and fine sediment in the lower reaches of Stonton Brook (e.g. U/S Thorpe Langton STW and Thorpe Langton sites) are all starting to improve.

Water quality as indicated by WHPT-ASPT

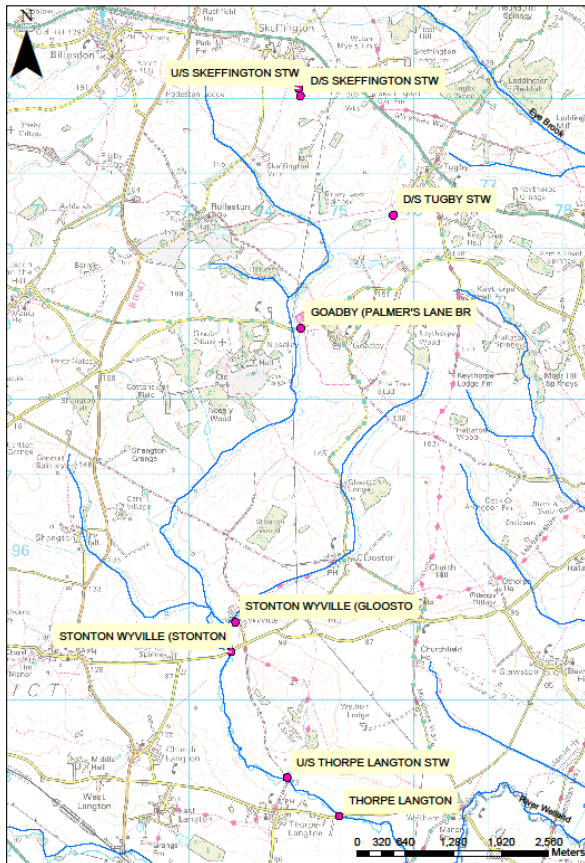
- The most recent data shows that Skeffington STW and Tugby STW appear to still be greatly affecting water quality in terms of organic enrichment, as was also concluded from the spring 2016 data. Tugby STW, however, shows a slight improvement between the 2016 and 2017 datasets, whereas Skeffington STW shows no particular improvement.
- Whilst the Stonton Wyville (Glooston Arm) appears to show a water quality issue, it is more likely that this is a result of a combination of low flow and sediment pressure, as was also the conclusion in 2016.
- The remainder of the Stonton Brook catchment continues to show generally good water quality.

Flow conditions as indicated by LIFE

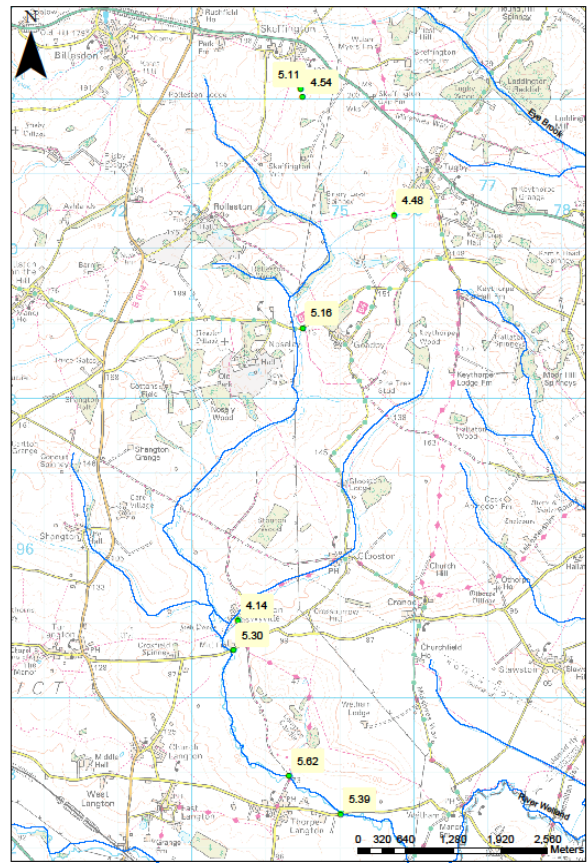
- Flow conditions remain broadly similar in 2017 to those in 2016 (generally good throughout the Stonton Brook catchment) with an improvement in flow conditions at the Goadby site, which indicated a low flow pressure in 2016.
- Stonton Wyville (Glooston Arm), however, continues to show a severe pressure due to low flows.
- The D/S Skeffington STW site has also started to indicate a slight flow pressure, though this is more likely to be a result of the aforementioned water quality issue.

Fine sediment as indicated by PSI

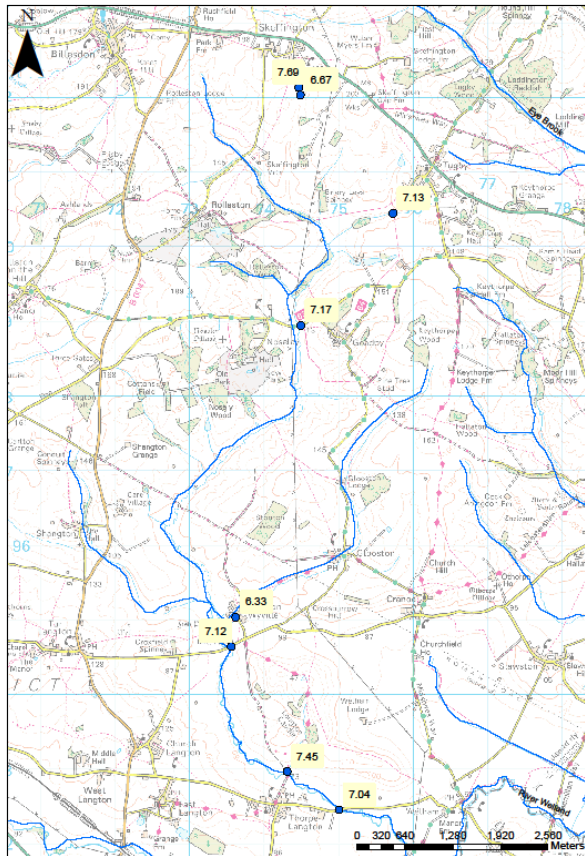
- Fine sediment is a prevalent pressure throughout the catchment, particularly in the upper reaches (e.g. Goadby (Palmer's Lane Bridge), D/S Tugby STW and D/S Skeffington STW).
- In comparison to the spring 2016 data, fine sediment pressure appears to be easing on the Tugby tributary of Stonton Brook with the knock-on effect of a co-occurring reduction in fine sediment pressure at the Goadby (Palmer's Lane Bridge) site.
- The Stonton Wyville (Glooston Arm) site was noted in the 2016 data to be particularly impacted by fine sediment and this is likely exacerbated by the low-flow pressure. The 2017 data demonstrates that the site remains a particular concern for the same reasons.



Location of Stonton Brook monitoring sites

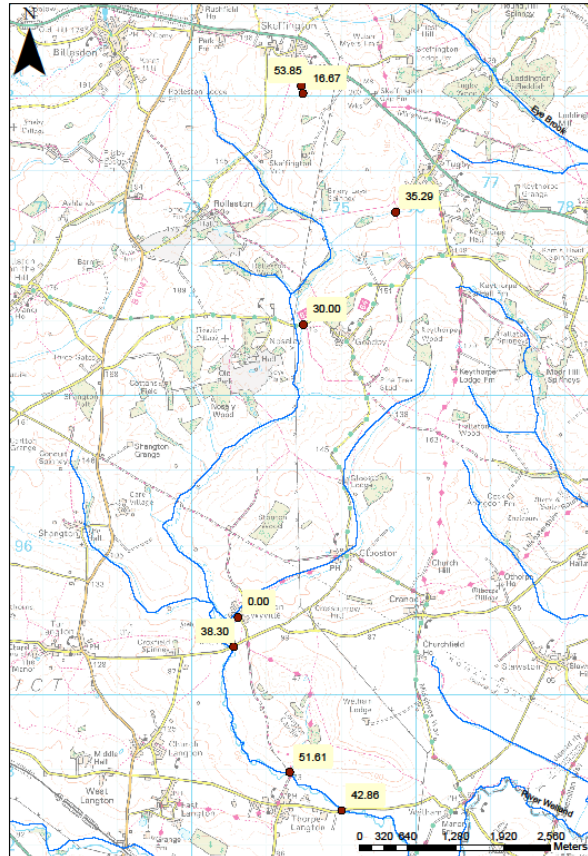


WHPT-ASPT scores displayed by site



LIFE scores displayed by site

(N.B. Larger maps available on request)



PSI scores displayed by site