

Stonton Brook Report, Spring 2016

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.

The results of the index calculations are presented on separate maps for WHPT-ASPT (Figure 1), LIFE (Figure 2) and PSI (Figure 3). From these data, the following conclusions can be made:

Water quality as indicated by WHPT-ASPT

- D/S Tugby STW shows a water quality issue. There is no indication of flow pressure at the site and the fine sediment condition is similar to other nearby sites.
- D/S Skeffington STW may be also indicating a slight water quality issue, although the decrease in WHPT-ASPT may also result from the fine sediment increase.
- Whilst the Glooston Arm of Stonton Brook appears to show a water quality issue, it is more likely that this is results from both low flow and sediment pressure.
- The remainder of the Stonton Brook catchment shows good water quality.

Flow conditions as indicated by LIFE

- Generally speaking, flow conditions appear good throughout the Stonton Brook catchment.
- The Glooston Arm, however, shows a severe pressure resulting from low flows.
- The Goadby (Palmer's Lane Bridge) site also indicates a low flow pressure.

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).
- The Glooston Arm of Stonton Brook is particularly impacted by fine sediment and this is likely exacerbated by the low-flow pressure.

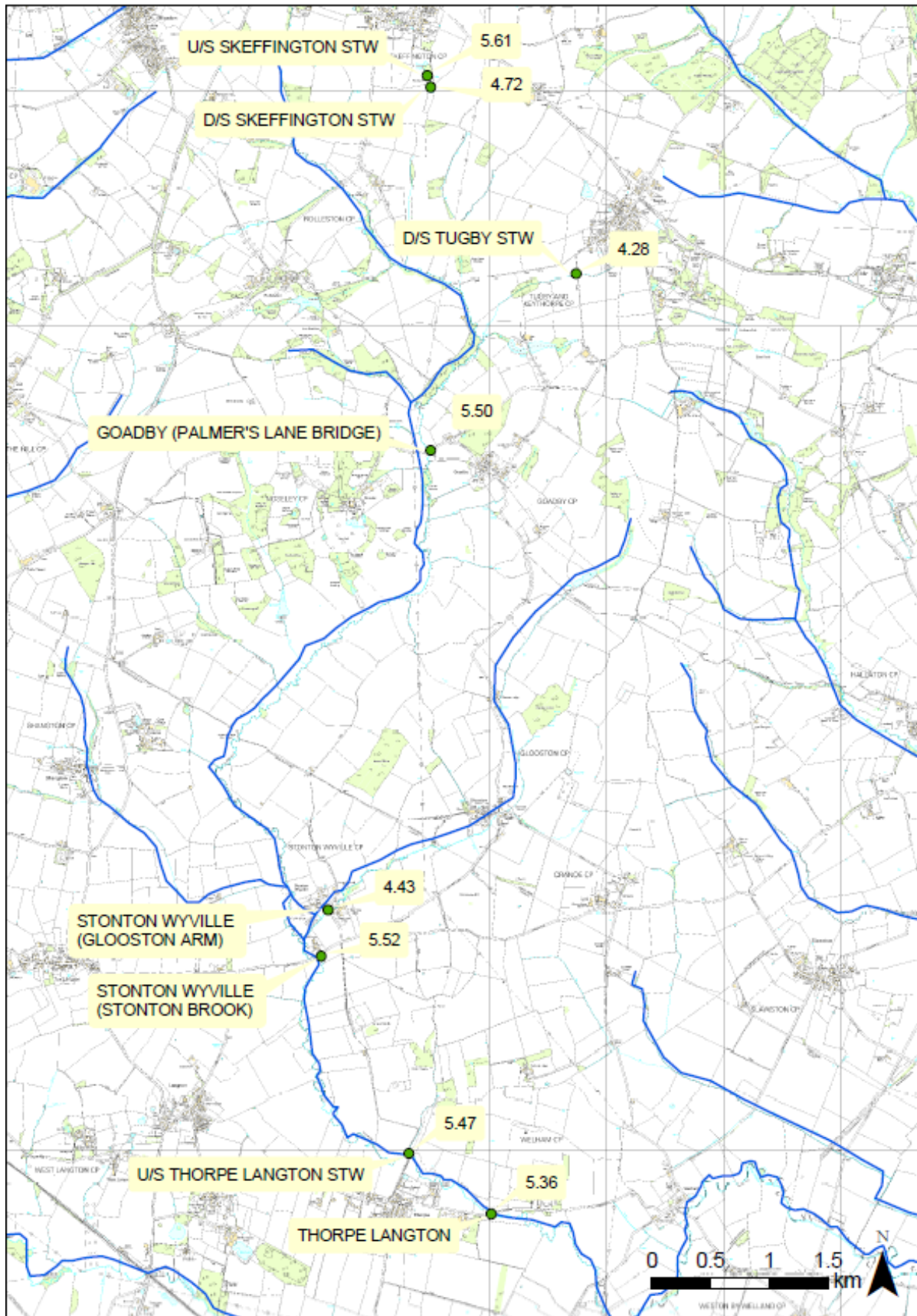


Figure 1: WHPT-ASPT scores displayed by site

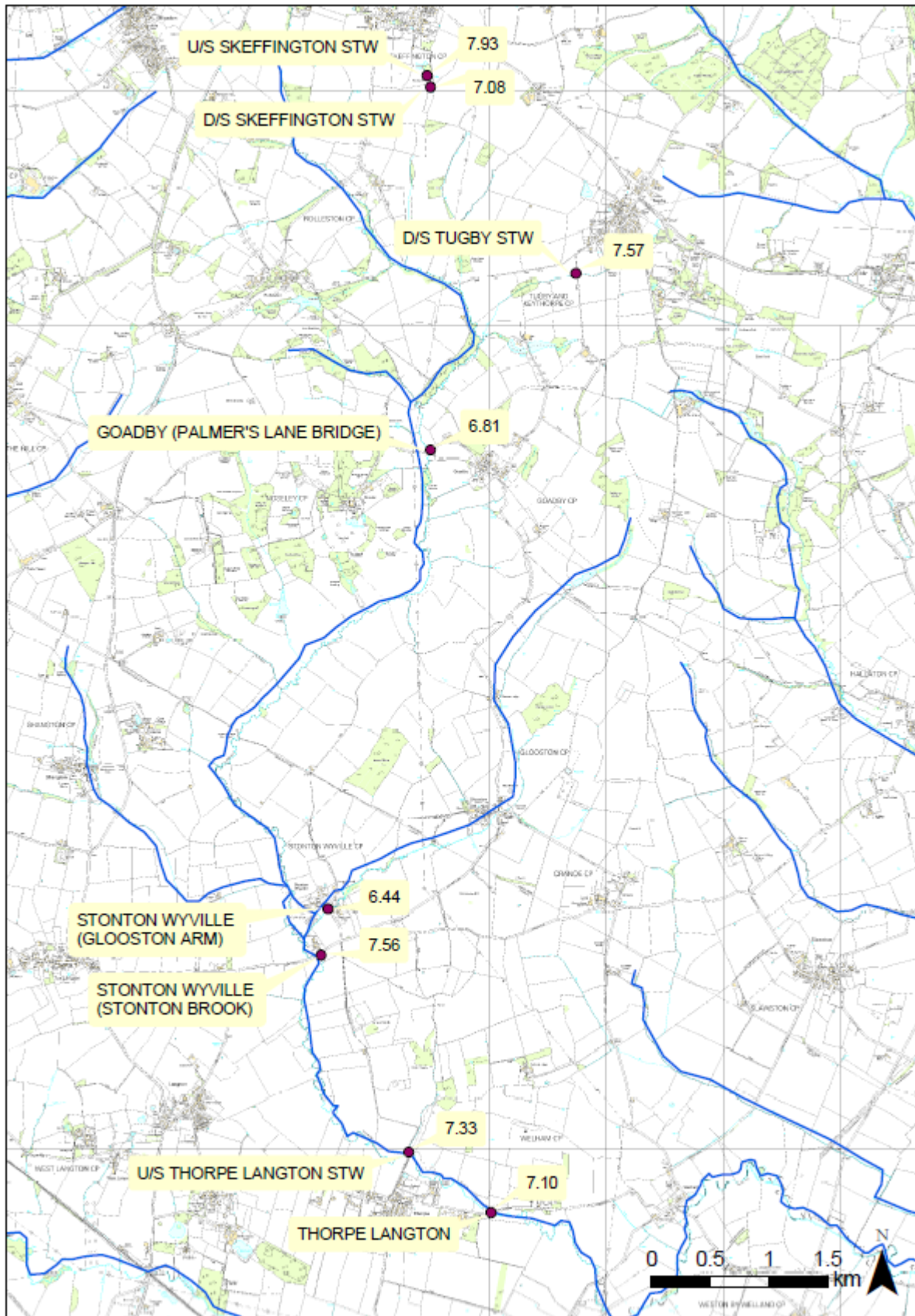


Figure 2: LIFE scores displayed by site

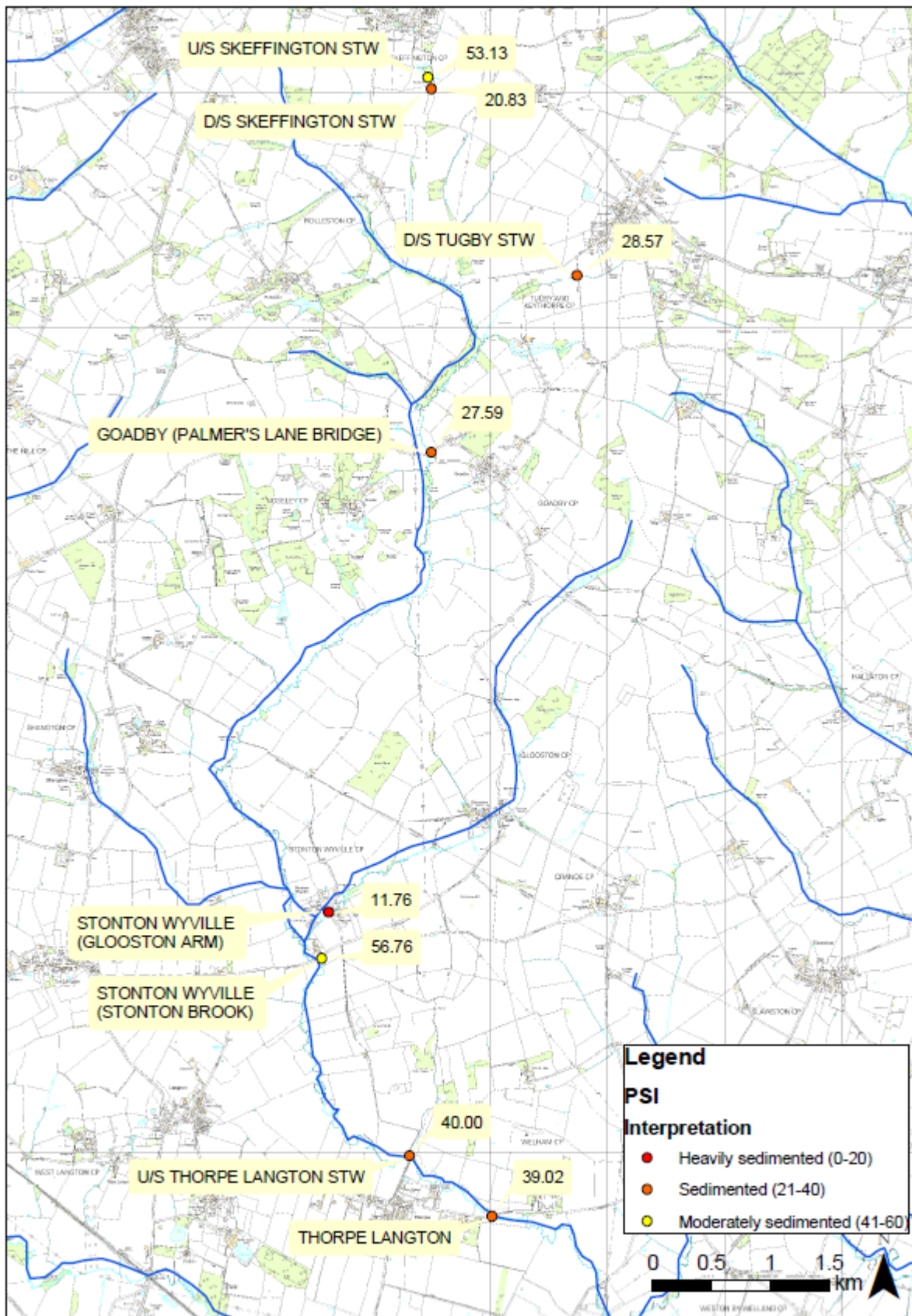


Figure 3: PSI scores displayed by site