Wyre Forest Study Group

Waterweed in the Lower Stour, but not the River Severn

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Throughout 2024 and 2025 much survey effort went into looking for waterweed in the River Severn, between Bridgnorth and Bewdley. On casual observation, there is currently none, except for Amphibious Bistort *Polygonum amphibium*, rooted within the river bank, mostly north of Arley. This contrasts with how it was up to around five years ago, for which there is copious evidence of dense beds of aquatic *Ranunculus* species, or Water Crowfoot, in many places. The demise of the waterweed, as shown in Environment Agency data between 2002 and 2022, is recorded in Meade (2024).

The decline in biota is not restricted to the waterweed, and members of the Study Group have reported on the loss of molluscs and bryophytes, with a concomitant rise in filamentous green algae, and possibly *Melosira*, a colonial diatom, mixed with a fine buff-coloured sediment that obscures the formerly gravel-covered river bed. Details of these surveys are also included in Meade (2024). A comparison of macrophyte and invertebrate-based indices for assessing the ecological status of the river are compared in Meade et al. (2025).

It was with some surprise that one Study Group member reported that waterweed could be seen in the River Stour, at a Kidderminster central town location, and this stimulated a more systematic survey throughout Kidderminster in 2025. The surprise arose from the common perception that, in terms of easily measured constituents, the Stour is more polluted than the Severn. The survey was from bridges over the River Stour between The Range car park on the north edge of Kidderminster, and the Falling Sands railway viaduct, just to the north of Wilden Marsh, in the south (Figure 1, Table 1).



Figure 1. Waterweed in Kidderminster, July 2025. Numbers are as assigned to waypoints by the GPS.

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Table 1. Distribution of waterweed species along the River Stour through Kidderminster. A highly subjective and arbitrary score has been applied for each type, with ++++ as the highest cover.

Point	Notes	Sparganium emersum	Narrow-leaved Potamogeton	Aquatic Ranunculus spp	Myriophyllum spp
351	*Sparganium emersum* plus another	+++	++	(+)	-
352	Possible *Potamogeton pectinatus* and *Ranunculus* downstream	+++	++	+	-
353	*P. pectinatus* & *Ranunculus*	+	++	++	+
354	*Ranunculus*	+++	-	+	-
355	*P. pectinatus* & *Ranunculus*	++	++	+++	-
356	Possible *P. pectinatus* and *Ranunculus* upstream		++	+	-
357	Possible *P. pectinatus* and *Ranunculus* downstream	++	+++	++	-
358	River splits, runs under shops. *Ranunculus.*	-	-	+++	-
359	From bridge	+	++	+++	-
360	Mostly *S. emersum*	+++	-	-	-
361	Mixed upstream, downstream *P. pectinatus*	+++	++	+++	-
362	Narrow waterway, a 'cut'?	+	-	-	-
363	Only *S. emersum* seen, very little	+	-	-	-
364	*P. pectinatus* & *Ranunculus*	++	+	++	-
365	*P. pectinatus* & *S. emersum*	+	+++	-	-
366	From canal; *S. emersum*	+	-	-	-
367	*P. pectinatus, Ranunculus, S. emersum*	+	+++	+	-
368	*S. emersum, Ranunculus*	++	-	++	-
369	*S. emersum, P. pectinatus*	+	+	-	-
370	Overgrown, no visibility	-	-	-	-
371	*P. pectinatus, Ranunculus, S. emersum*	-	++	++	-
372	*Ranunculus*	+	++	+++	-
373	*P. pectinatus & Ranunculus*	-	++	+	-
374	*P. pectinatus & Ranunculus*	-	++	+++	-
375	*S. emersum, Ranunculus*	+	++	+++	-
376	Bare, snagged strand of *Ranunculus?*	-	-	(+)	-
377	Wooded, distant *Sparganium emersum*	+	-	-	-
378	Wooded, few strands of *S. emersum*	+	-	-	-
379	Wooded, few strands of *S. emersum,* silt	+	-	-	-
380	*P. pectinatus. Typha latifolia, S. emersum*	+	+	-	-
381	Diffuse *S. emersum*	+	-	-	-
382	Mostly *S. emersum,* strand of *Ranunculus?*	+++	++	(+)	-
383	*S. emersum, Ranunculus*	++	-	++	+

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Figure 2. Ranunculus spp, *Potamogeton pectinatus* and *Sparganium emersum* at Point 361. Roger Meade

Two other weekly water sampling locations at Wilden Marsh beyond Figure 1 both had waterweed, the most northerly with *Sparganium emersum* and *Potamogeton pectinatus*, the other with *Sparganium emersum* and *Myriophyllum species*. The Ranunculus, that was identified as *R. penicillatus* subsp. *pseudofluitans* at one location in Kidderminster, is confined to the town, being absent from The Range, as the most northerly site, and downstream from the Worcester Road roundabout in the south. However, three other species of waterweed have been found further downstream, and Water Crowfoot is reported to be growing in the River Stour near Kinver.

Differences between the Severn and the Stour

Given the urban setting of much of the Stour catchment, a lower water quality might be expected, and this is reflected in mean measurements of 0.15 ppm phosphorus as phosphate compared to 0.09ppm in the Severn over the same six month period in 2025, as measured at the four Kidderminster points and on the Severn near Bewdley. The difference in nitrate nitrogen is even greater, with the Severn at Bewdley around 3ppm (15ppm nitrate), and the Stour with 13ppm nitrogen as nitrate (57ppm nitrate).

Turbidity is also being recorded at the four Stour water sampling points and at a fifth on the Severn. It shows that the Severn remains turbid for longer after a rain event. Its water level is slow to rise and the peak lasts longer than in the Stour, which by comparison is 'flashy'. The outcome is that the water is the Stour is clearer for longer than in the Severn. Preliminary measurements of calcium as hardness in the water show that the Stour consistently has a higher concentration than the Severn.

For the future

The Stour catchment is extensive, combining the urban sources of Wolverhampton, west Birmingham, Stourbridge and Halesowen with a contrasting groundwater contribution from the Clent Hills and four other tributaries further south. Tufa deposits have been observed in at least one Clent Hills location, and Sites of Special Scientific Interest (SSSI) have been designated to include some of these (Figure 3). There is undoubtedly a degree of enrichment with calcium ions as measured in Kidderminster, and their source needs to be determined. Combine this with the acid mire described in the SSSI citations for Illey Pastures and the Penorchard & Spring Farm Pastures and it provides an interesting mix.

As for the Wyre Forest flushes, the range of acidity and base-richness in the water sets the scene for diverse plant flora and invertebrate fauna, well within the ambit of Study Group members. Several citizen science groups are already measuring phosphorus and nitrogen in the water, as a means of tracking pollution, and it is fertile ground for the detailed knowledge of Study Group members to play an important part in describing this very special river and its catchment.

References

Meade (2024) New Dimensions: Study Group Contributes to the Bigger River Picture. In *REVIEW*, Wyre Forest Study Group, 25, 12-14.

Meade, R., Averill, M. and Ponman, T. (2025) Good Ecological Status? The disturbing case of the middle Severn. In *British Wildlife*, 37/3, 183 – 189.

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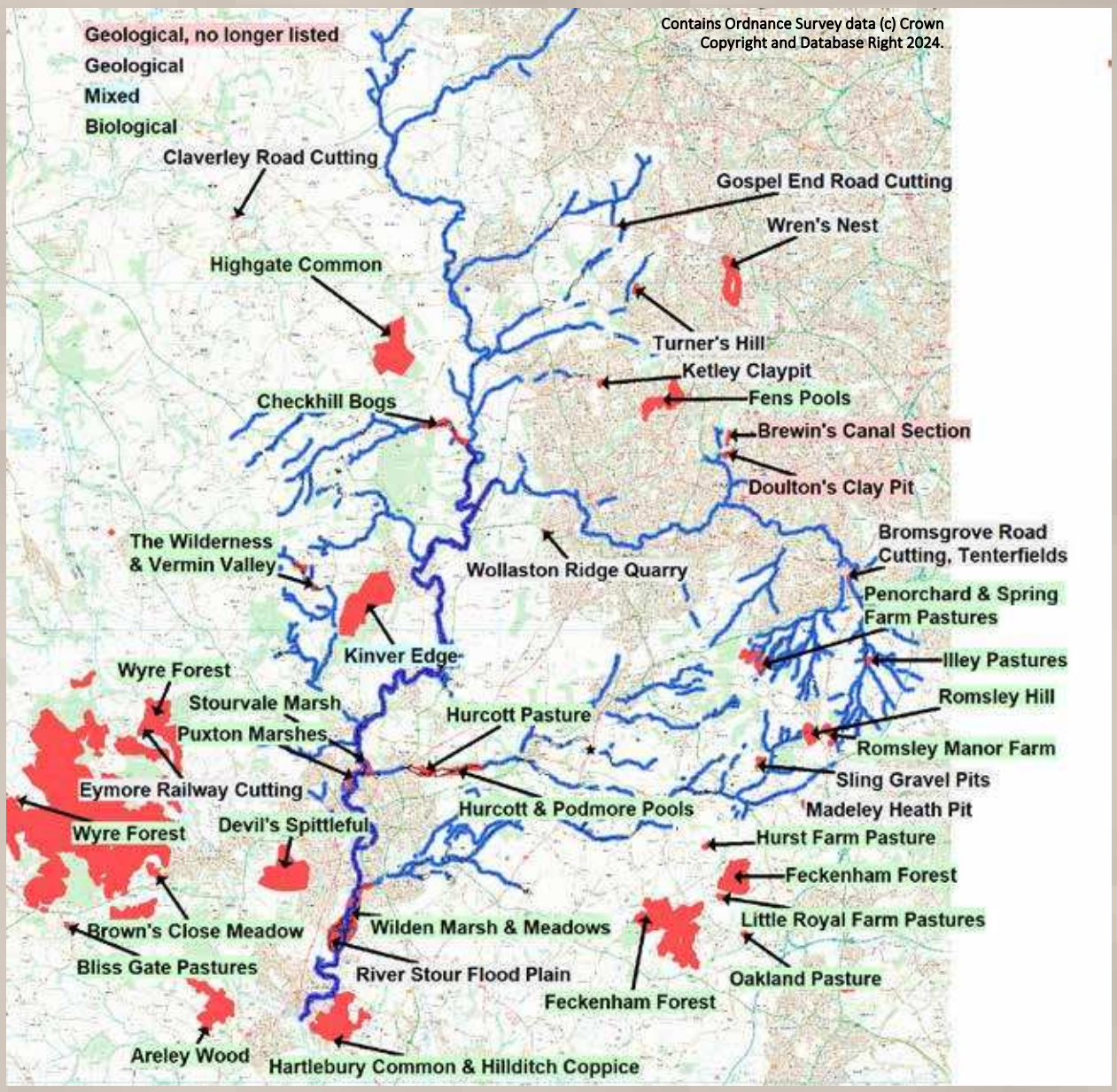


Figure 3. Geological and biological SSSI polygons from Natural England's database.