

The Darent at Preston Farm (10th May 2022)

A survey of the invertebrates in the Preston Farm of the Darent was again carried out, using the basic protocol of the 'Anglers' Riverfly Monitoring Initiative' (ARMI) – as now specified by the Riverfly Partnership. This involves taking three timed (each one minute) 'kick' samples of animals from the river using a standard 1mm mesh net. The samples cover the range of habitats present, including stony areas, rooted plants, and the margins of the channel. Eight groups of animals are then assessed in the samples, estimating the numbers of each caught and expressing the numbers in a series of (logarithmic) categories: 1-9 individuals, category A; 10-99, category B; 100-999, category C; 1000+, category D. The groups of invertebrates assessed are:

Cased caddis (Trichoptera; commonly known as sedge flies)
Caseless caddis (Trichoptera)
Mayflies (Ephemeroptera: Ephemeridae, the classic angler's mayfly)
Blue Winged olives (Ephemeroptera: Ephemerellidae)
'Flat-bodied' mayflies (Ephemeroptera: Heptageniidae)
Olives (Ephemeroptera: Baetidae)
Stoneflies (Plecoptera)
Freshwater 'shrimps' (Crustacea: *Gammarus*)

These are the only groups that are formally assessed in the basic method. Many others were present and were noted but not counted.

The counts at Preston Farm this year were:

Cased caddis (8 individuals, category A)
Caseless caddis (around 20, category B)
Mayflies (around 20, category B)
Blue Winged olives (>100, category C)
Olives (>1000, category D)
Flat mayflies (1, category A)
Freshwater shrimps (>100, category C)

This fauna indicates a good ecological status for the Darent at the sample site. We found no organisms characteristic of overenriched or polluted streams, such as leeches and red bloodworms (Chironomidae; midges). Note that no stoneflies were taken. This is of no real concern since stoneflies are mainly insects of faster flowing, cold-water streams of the uplands and are much rarer in the south-east of England (some can be found in cold, ground-water springs but not commonly chalk streams). We would not expect to find them in a lowland, productive river like the Darent. Similarly, flat mayflies are more common in more erosive rivers with a coarser substratum than the Darent, so the fact that they are present (even in low numbers) is a good sign. The spent adults are sometimes called "Great Red Spinner" by anglers, though there are other names.

We did find a good population of another mayfly typical of lowland, stony streams, a species of the family Leptophlebiidae (probably *Paraleptophlebia submarginata*), whose adult is

commonly called the “Turkey Dun” or possibly the “Claret Dun” by anglers. There were also many damselfly (‘demoiselle’) larvae (*Calopteryx*, the beautiful, blue-winged adults will be on the wing later in the year), and large numbers of ‘blackfly’ larvae (Diptera: Simuliidae). These latter attach themselves to stems of the water crowfoot (*Ranunculus*) in the river and feed by filtering fine organic particles from the flow. Overall, the samples would indicate good water quality for a stream draining a largely arable catchment, with no sign of gross organic enrichment. There was no significant change from the assessment carried out in 2021 at a similar time of year.

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