

Yellow mayfly

(*Potamanthus luteus*)



The Yellow mayfly is one of Britain's rarest mayflies. The nymphs or larvae of this mayfly typically live in silt trapped amongst stones on the riverbed in pools and margins and grow to between 15 and 17mm. They are streamlined with seven pairs of thick feathery gills that are held outwards from their sides. The adults have three tails and large hindwings. The body is a dull yellowish-orange with a distinctive broad yellowish brown stripe along the back. The wings are yellow and the cross-veins are a dark reddish colour.

Due to its rarity and decline in numbers this insect has been made a Priority Species on the UK Biodiversity Action Plan (BAP).

Life cycle

There is one generation of this mayfly a year which overwinters as larvae. The adult mayflies are short lived and emerge between May and late October (with peak emergence in July). They will typically emerge at dusk and usually from the surface of the water, although they may also emerge by climbing up stones or plant stems partially or entirely out of water.

Distribution map

This mayfly is historically a rare species with populations in the River Wye and Usk, Herefordshire. The most recent surveys show a dramatic decline in the River Wye population and have failed to find this species in the River Usk. A small population has however recently been found in the River Teme in Worcestershire.

Habitat

In the Herefordshire streams where this species has been found, the larvae have been found under loose stones, preferring mobile sections of shingle or a mixture of larger stones with loose shingle such as those found downstream of bridges or at the confluence of tributaries. The highest densities of larvae can be found at sites with deeper, slower-flowing water i.e. c.35cm deep/0.15m per second. Adults can be found in bankside vegetation and nearby trees.

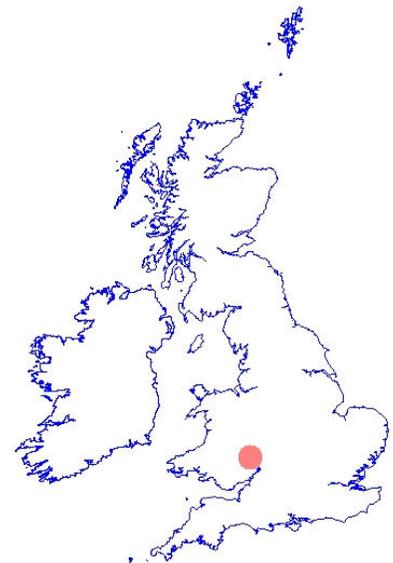


Fig. 1 Generalised distribution map confirmed records of *Potamanthus luteus* in the UK

Threats and causes of decline

The main threats include:

1. Poor water quality - both persistent and catastrophic pollution events
2. Changes to the structure and management of marginal and riparian vegetation
3. Low flows caused by abstraction
4. High levels of suspended silt
5. Unsympathetic dredging
6. Neglect of river channels, leading to choking with vegetation
7. Removal of side channels through river engineering work

As the adults of this species are attracted to light, the positioning of bankside lights, such as road lights, may also have a deleterious effect on breeding populations.

Habitat management

This species relies upon good water quality therefore the most important management is the maintenance and improvement of water quality. Additional management considerations should include:

- **Maintain good structure and management of marginal and riparian vegetation:** any work that is likely to damage aquatic or bankside vegetation should be carried out only on one bank or one side of the river and preferably on only short stretches;
- **Reduce siltation:** allow a buffer strip of uncultivated vegetation along watercourses and ensure bankside vegetation is not overgrazed by livestock;
- **Reduce abstraction:** including abstraction directly from watercourses or via drawdown of aquifers and reservoirs;
- **If maintenance and engineering works are necessary, including dredging:** plan them sympathetically to avoid habitat loss (especially side channels) and excessive riverbed disturbance, any habitat loss should be mitigated by habitat enhancements and creation;
- **Do not let vegetation choke river channels:** in order to maintain open habitat; and
- **Keep bankside and nearby lighting down to a minimum:** to reduce the negative impacts on the breeding success of this species.

Environmental stewardship options

There are a number of options relevant to the protection of this species including:

HLS options: **HE9** 6m buffer strips on cultivated land next to a watercourse
 HJ5 In-field grass areas to prevent erosion and run-off

HLS capital items: **FSB/H** Sheep fencing
 RPD Cross-drains under farm tracks

ELS options: **EE9-10** 6m buffer strips on intensive grassland next to a watercourse
 EJ11 Maintenance of watercourse fencing

References

Bratton, J (1990). A review of the scarcer Ephemeroptera and Plecoptera of Great Britain. Research and Survey in Nature Conservation No. 29. JNCC, Peterborough.

Macadam, C (2011) Species dossier: *Potamanthus luteus*, Yellow mayfly. Buglife. Available at www.buglife.org.uk



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