

Rare medium stonefly

(*Isogenus nubecula*)



The Rare medium stonefly has only been known to occur in the Welsh River Dee and may now be extinct.

Adults have two long tails and both the female and male are fully-winged. Females are 15-20mm long while males are slightly shorter at 14-19mm. Nymphs are 14-21mm long.

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

Life cycle

Adults of this stonefly are reported as being on the wing between March and April but may occur later.

Distribution map

This stonefly has only been confirmed in the UK from the River Dee, Flintshire, Wales.

Habitat

This stonefly is found in large stony (cobble and gravel) lowland rivers. Larvae are typically found towards the middle of the river where the flow is swift and deep (25-30cm). Areas of deep water may provide important refuge for larvae during periods of pollution.

Larvae are unlikely to be found in extensive growths of aquatic *Ranunculus* or deeper areas with a bed of sand and silt. The adult stoneflies will use bankside trees and vegetation.

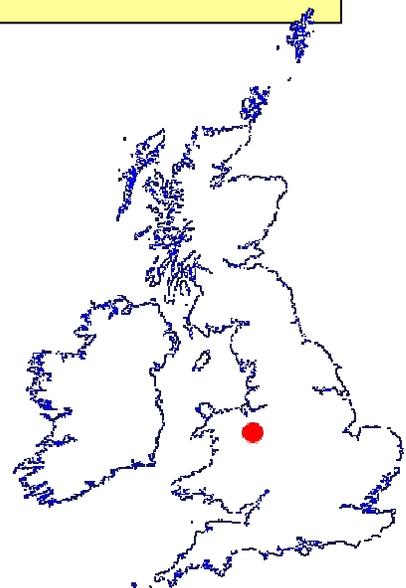


Fig. 1 Generalised distribution map of confirmed records of *Isogenus nubecula* in the UK

Threats and causes of decline

The main threats include:

1. Poor water quality - pollution incidents, particularly those that occur above Bangor-on-Dee, and an increase in water temperature
2. Poaching of riverbanks and channel by livestock
3. Agricultural pollution – particularly slurry from factory farming and the leachate from silage clamps
4. Unsympathetic engineering works – dredging, channel modifications and gravel removal
5. Changes to riparian habitat

As the adults of this species are potentially attracted to light, the positioning of bankside lights, such as road lights, may also have a deleterious effect on 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;
- **Fence off riverside habitat from livestock:** to reduce poaching
- **Allow buffer strips of uncultivated vegetation adjacent to watercourses:** to reduce harmful run off into the watercourse
- **If maintenance and engineering works are necessary, including dredging:** plan them sympathetically to avoid habitat loss 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

ELS options

EE9-10 6m buffer strips on intensive grassland next to a watercourse

EJ11 Maintenance of watercourse fencing

References

Bratton J.H. (1990) A review of the scarcer Ephemeroptera and Plecoptera of Great Britain. Nature Conservancy Council, Peterborough, UK. Research & survey in Nature Conservation no. 29:1-39.

Macadam, C (2011) Species dossier: *Isogenus nubecula*, Rare medium stonefly. Buglife. Available at www.buglife.org.uk



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