SPECIES MANAGEMENT SHEET

Southern iron blue

(*Baetis niger*)

The Southern iron blue is a widespread mayfly species whose abundance appears to have declined by as much as 80% in some areas in recent decades. The presence of this mayfly is an excellent indicator of the health of the riverfly fauna. The larvae are mainly found in aquatic vegetation and are narrow-bodied with a black band across their tail and only have 6 pairs of plate-like gills. The adult fly is small with two tails and small oval hindwings.

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

Life cycle

This mayfly has two generations per year - a slow growing winter generation and a much faster summer generation. This results in a fairly long flight period, with adults in flight between April and October. Emergence of the adults is thought to occur at the surface of the water during daylight hours. Once mated, the female fly either pulls herself under the water surface to lay her 1200 eggs directly on a partly submerged stone or in some cases she releases her eggs in several batches by dipping the tip of her abdomen onto the water surface.

Distribution map

This mayfly is a widespread, though localised species which is found in running waters throughout the British Isles with the exception of Ireland.

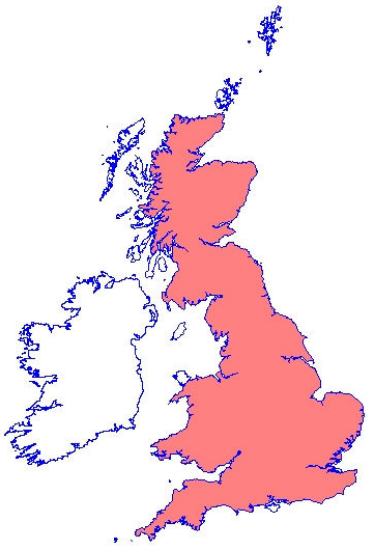

Fig. 1 Generalised distribution map of confirmed records of *Baetis niger* in the UK

Habitat

The larvae of this mayfly are chiefly found on aquatic macrophytes in running waters where they crawl amongst the vegetation in riffle areas or swim in short, darting bursts amongst the substrate. They feed by scraping algae from submerged stones and other structures, or by gathering or collecting fine particulate organic detritus from the sediment.

Threats and causes of decline

The main threats include:

1. Poor water quality - both persistent and catastrophic pollution events
2. High levels of suspended silt
3. Channel engineering such as dredging, channel modification or gravel removal
4. Gross alterations to aquatic vegetation structure such as weed cutting
5. Changes to the riparian habitat
6. Low flows caused by abstraction

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 aquatic, marginal and riparian vegetation:** any work that is likely to damage aquatic or bankside vegetation should be carried out only on one bank or on 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:** whether for irrigation, water supply or other purposes, 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 change to river morphology, habitat loss and excessive riverbed disturbance, any habitat loss should be mitigated by habitat enhancements and creation.

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

Macadam, C (2011) Species dossier: *Baetis niger*, Southern iron blue. Buglife. Available at www.buglife.org.uk

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Acknowledgements: Craig Macadam. Sheet prepared by Suzannah Dangerfield.