



Common Clubtail

Gomphus vulgatissimus

Species Action Plan

1. Introduction

The common clubtail dragonfly is listed on the GB Red List as Near Threatened in Britain (occurring in 120 10km national grid squares). In Worcestershire the dragonfly has been recorded in 15 10km squares representing 19% of the national distribution and making it possibly the most important county in the UK for the species. It is the only representative of its family in the UK.

2. Current Status

2.1 Ecology and habitat requirements

The common clubtail is distinguished by being the only dragonfly in the UK whose eyes are set apart. It is black with yellow markings and is on the wing between early May and early July. Found on moderate to slow flowing, meandering rivers with silty beds, the larvae spend up to three years in the river. The quality of the river is paramount during this development. For the adult there appears to be a need for refuge areas of scrub or woodland either at the riverside, or wherever the nearest cover is available, where maturation and later pairing takes place.

Whilst the exact optimum requirements of the species are not fully understood, the habitat where it is most abundant coincides with rivers having: good quality; reliable flows in summer; banks where there is little disturbance especially between early May to early June; channels not subject to dredging or other kinds of disturbance; not suffering from over stocking of fish or water fowl; situated in wooded valleys where there is ample refuge areas.

The dragonfly cannot be surveyed by counting adult numbers because they stray so far from their riverside origins, instead the larval cases (exuviae) left behind following adult emergence are recorded to locate breeding sites and give an absolute count of abundance. In this way emergence numbers can be compared from one site or river to another and from one year to another.

2.2 Population and distribution

Although found on still waters in other parts of Europe, this widespread but never common dragonfly is entirely confined to rivers in the British Isles. In Worcestershire records from a dedicated three-year survey (2016-2018) currently show a good distribution along the River Severn and on most of the River Teme, although there has been a small retreat from the upper reaches of the latter (figure 1). Of concern, however, is an absence of breeding records along the River Avon post-2015, whereas previously the species had been found breeding here in good numbers. In a separate long-term survey on the River Severn at Bewdley, a drastic fall in emergence rates in the years 2002–2006 has been identified: currently there appears to be a slow recovery from this.

2.3 Legislation

The species has no specific legal protection.

2.4 Summary of important sites

The species is found all along the River Severn and on the River Teme up to Tenbury. Historically the River Avon has been significant and it is hoped that the species will make a return to its previous range along this river.

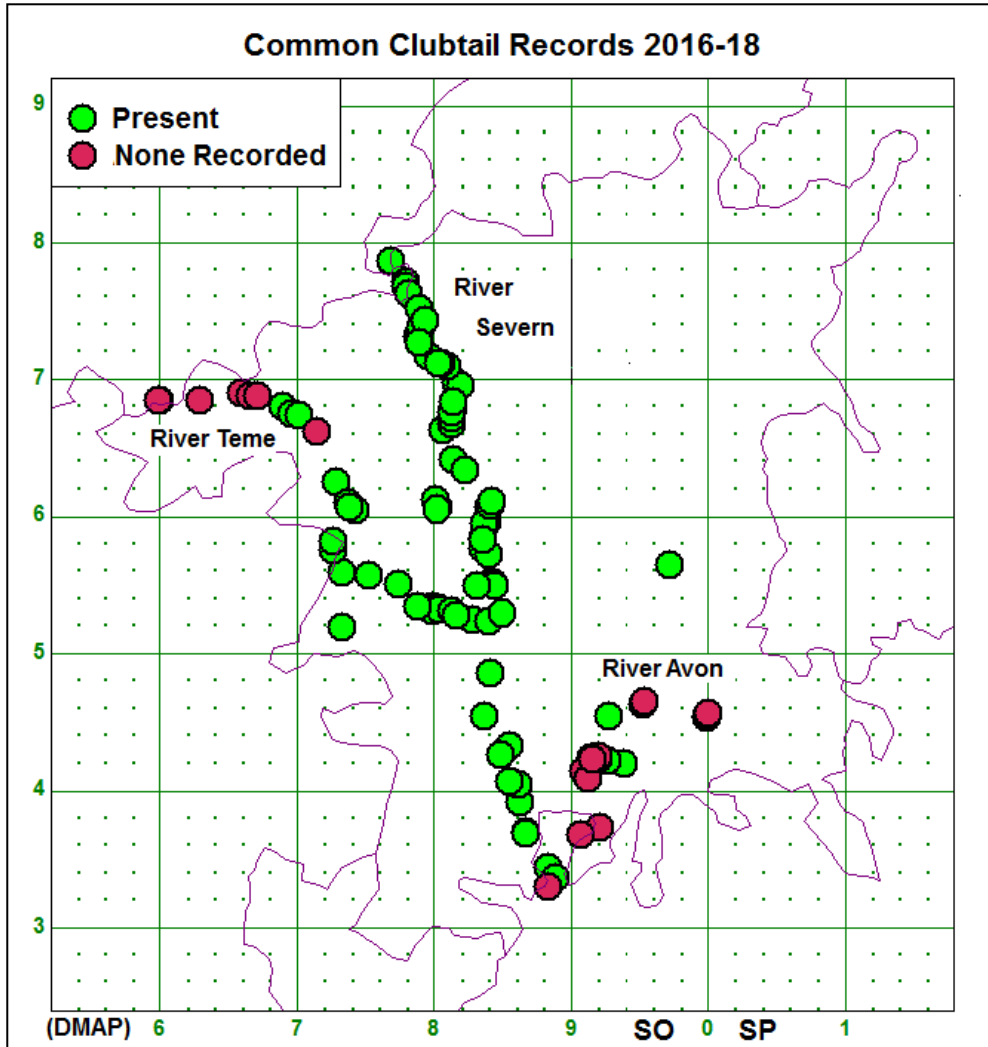


Figure 1. Common Clubtail records for Worcestershire. Purple circles are locations where no signs of breeding could be found during 2016-18. Green circles show records of at least an adult from the same three year period. Map provided by Mike Averill (Dragonflies of Worcestershire project).

3. Current factors affecting the species

Factors affecting the life cycle of the dragonfly include:

- Poor water quality.
- Excess sediment within rivers.
- Unsympathetic river and bankside management.
- Prolonged seasonal low levels leading to reduced water quality.

- Loss of nearby woodland where pairing takes place.
- Bank side damage by grazing or trampling during the crucial synchronised emergence period from early May to mid June.

Club-tailed dragonflies (the Gomphidae) are one of the more pollution-sensitive freshwater taxa. Under the Biological Monitoring Working Party (BMWP) system the common clubtail is assigned a value of 8 (10 being the most sensitive) illustrating its vulnerability to pollution

4. Current Action

4.1 Local protection

The River Teme is a SSSI. The Rivers Severn and Avon are county Local Wildlife Sites. Gwen Finch, a wetland site on the River Avon, is owned and managed by Worcestershire Wildlife Trust (WWT) as a nature reserve.

4.2 Site management and programmes of action

- The Environment Agency is aware of the emergence period for common clubtail when planning their riverside programmes and the species is noted in the Environment Agency management documents.
- Worcestershire Wildlife Trust's Gwen Finch reserve and the neighbouring John Bennett Wetland reserve are situated in the floodplain of the River Avon near Eckington. Prior to its restoration the Gwen Finch site was a 20-hectare agriculturally drained semi-improved ryegrass lay with little or no wildlife value. Restoration works began in 1999 and were completed in 2001 and involved the creation of 4 large scrapes, 3 of which were planted with reeds, and the re-profiling of a former drainage ditch together with sections of the river. Water from the Berwick Brook is pumped onto the site via two windpumps with any excess returning to the river. By 2001 otter (*Lutra lutra*) were already using the reserve and redshank (*Tringa tetanus*), yellow wagtail (*Motacilla flava*) and reed warbler (*Acrocephalus scirpaceus*) were breeding. The site is one example where the riparian habitat within the Avon floodplain is being managed purely for wildlife benefit and common clubtail has been recorded here. The creation of the John Bennett reserve in 2010 added to the extent of wetland habitat available for wildlife.
- Other important sites along the Avon include the Vale Landscape Heritage Trust reserves at Lower Moor.

4.3 Survey, research and monitoring

- The Dragonflies of Worcestershire (Averill, 1996) was published following 10 years of survey work to present a complete picture of all dragonfly species' distribution and ecology in the county. A website is now maintained as a follow up to the book (see reference section).
- The British Dragonfly Society (BDS) began a long-term study on common clubtail on the River Severn at Bewdley in 1987. Since then surveys have been undertaken on an annual basis (with the exception of 2001 due to Foot and Mouth Disease), with occasional parallel surveys on the Avon and the Teme.

- The BDS ran a 3 year national common clubtail survey between 2017 and 2019 in order to assess the changes to its range and status. There are other areas in the country where the species has shown declines and it is hoped that analysis of the national data will help with understanding why there have been losses on the River Avon.
- The BDS is currently requesting records towards the publication of a State of Dragonflies 2020 report.

5. Associated Plans

Rivers and Streams, Wet Woodland, Scrub, Woodland, Traditional Orchard, Hedgerows.

6. Conservation Aim

The species has maintained or increased its range and abundance within the county and any negative change in its distribution has been researched and explained

7. Conservation Objectives

- Raise awareness of the species and its ecology amongst riparian landowners and anglers to encourage appropriate habitat management and recording
- Ensure the species is considered in any operational river work by riparian land owners and NGO's
- Continue with annual survey work on county rivers
- Investigate the potential reasons for the species' sudden loss from the River Avon

References and further information

Averill, M (1996). *The Dragonflies of Worcestershire*. Published by the author.

Boudot, J-P (2014). *Gomphus vulgatissimus*. *The IUCN Red List of Threatened Species* 2014. <https://www.iucnredlist.org/species/165523/19163708>

Braune, E., Richter, O., Söndgerath, D and Suhling, F (2007). *Voltinism flexibility of a riverine dragonfly along thermal gradients*. *Global Change Biology*, **14**: 470-482.

British Dragonfly Society resources:

- <https://british-dragonflies.org.uk/content/clubtail-count>
- <https://british-dragonflies.org.uk/species/common-club-tail>
- https://www.british-dragonflies.org.uk/sites/british-dragonflies.org.uk/files/docs/Common%20Clubtail%20Management%20Profile_0.pdf

Cham, S., Nelson, B., Parr, A., Prentice, S., Smallshire, D and Taylor, P (2014). *Atlas of the Dragonflies in Britain and Ireland*. Field Studies Council.

Dragonflies of Worcestershire website

<http://dragonfliesofworcestershire.weebly.com/>

Hickling, R., Roy, D. B., Hill, J. K and Thomas, C (2005). *A northward shift of range margins in British Odonata*. *Global Change Biology*, **11**: 502-506.

Kemp, R. G and Vick, G. S (1983). *Notes and Observations on Gomphus vulgatissimus (Linnaeus) on the River Severn and River Thames*. *Journal of the British Dragonfly Society* **1**: 22 -25.

Richter, O., Suhling, F., Müller, O and Kern, D (2008). *A model for predicting the emergence of dragonflies in a changing climate*. *Freshwater Biology*, **53**: 1868-1880.

Termaat, T., Kalkman, V. J., Bouwman, J. H (2010). *Changes in the range of dragonflies in the Netherlands and the possible role of temperature change*. In: Ott J (Ed) (2010) *Monitoring Climatic Change With Dragonflies*. *BioRisk* **5**: 155–173.