The Riverfly Partnership

Volume 4
Issue 3

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From the Anglers' Riverfly Monitoring Initiative (ARMI) national team…

Welcome to this edition of the Riverfly Partnership newsletter. In fact, this is the first edition to be published for some time so it seems fitting to begin by providing an overview of ARMI nationally up to the end of March 2019.

The Riverfly Partnership is now in the third and final year of the current funding agreement with the Environment Agency (EA). Towards the end of the last financial year the Riverfly Partnership submitted its report, "A review of the Anglers' Riverfly Monitoring Initiative in England, 2017 to 2018" to the Environment Agency. Work between EA and RP is ongoing to deliver actions arising from the report, and to extend the partnership agreement beyond March 2020. As always, we are incredibly grateful to the EA for providing both funding and strategic support to ARMI nationally, and, training, site registration / trigger level setting, and incident response support to ARMI hubs and groups locally.

In addition to funding received from the EA, in kind time provided by ARMI hub coordinators, ARMI group coordinators, and ARMI volunteers was valued at £661,276.

65 locally funded workshops were delivered to 673 volunteers, leading to 251 new ARMI sites being established.

55 Riverfly hubs continued to support and develop ARMI within their areas, with, importantly, an integration between those hubs and Catchment Partnerships developing.

ARMI volunteers now regularly monitor across more than 2400 sites UK wide, providing an effective acute river pollution early warning system to statutory body contacts locally.

Riverfly hubs and groups face an ever present challenge to secure funding to establish, maintain and support ARMI activity on their rivers. Severn Rivers Trust (SRT) has been involved with ARMI for many years and currently hosts ten Riverfly hubs, each centered around a single catchment partnership. Without being able to constantly secure funding, SRT would not have been able to develop and maintain the level of ARMI activity that it has so we are very excited to be able to share RP board member and former Severn Rivers Trust CEO, Tony Bostock's funding advice and guidance in this issue.

The impacts from pollution, climatic and other pressures are acutely in focus for us all, as are any enforcement, mitigation or rehabilitation measures that may result. With this in mind, we hope that the information contained below, about Enforcement Undertakings, will be of great interest.

As always, our continued and sincere thanks go to every single ARMI volunteer, coordinator, tutor and partner for their ongoing commitment to protecting and conserving our rivers across the United Kingdom. Special thanks must go to all rod licence paying anglers in England and to the Water Environment Improvement Fund, both of which provide funding (via the EA) to ARMI in England. Further thanks to SEPA for providing strategic support to ARMI in Scotland, to the Freshwater Biological Association (FBA) for hosting RP and the ARMI database, and to all RP Board and Executive members.

Riverfly Partnership Conference 2020

We are delighted to confirm that the 5th Riverfly Partnership Conference will be held in the Flett Theatre at the National History Museum, London on Friday 20th March 2020. **Please keep this date free in your diaries!**

Conference programme details, including speakers, timings and ticketing, are well on the way to being finalised so watch this space and the RP website for further information over the coming months. In the meantime, the following snippets should be enough to whet your appetites…

As well as presentations about the current status of ARMI and Riverfly Plus, the 5th RP Conference will see the national launch of the Urban and Extended Riverfly schemes. In a wider freshwater context: Professor Steve Ormerod from Cardiff University is set to focus on microplastics in rivers when delivering his keynote speech; Professor Richard Brazier, Exeter University, will speak about the South West beaver reintroduction projects (including implications for

fish passage and natural flood management), and; Salmon & Trout Conservation CEO, Paul Knight, will deliver a SmartRivers update. In addition, Paul Sams from the Tyne & Wear NHS Foundation Trust will be talking about his experience supporting patients from a mental health rehabilitation ward. He will take us through the ARMI monitoring they did, the effects on the patients, and how this fits within the Trust's Positive & Safe Care strategy. His major focus will be the power of patients taking part in an environmental project locally, and how that offers hope through inclusion, meaningful activity, and a connection to the local community and environment.

Funding for Riverfly hubs and groups

Although Tony Bostock MBE retired as Chief Executive of Severn Rivers Trust in 2018 he remains an active member of the Riverfly Partnership Board. Tony was instrumental in establishing ten Riverfly hubs across the Severn Catchment area (in both England and Wales) with ARMI training workshops, refresher sessions and Extended Riverfly sessions being offered year on year to volunteers. Of course, ARMI activity is only possible if adequate funding can be secured, something that Tony and Severn Rivers Trust have developed significant expertise in doing. The following information taps in to some of Tony's knowledge around securing funding for ARMI and is aimed at providing useful information to other Riverfly hubs and ARMI groups which are looking to do the same.

As background information the following is a list (although not comprehensive) of the funding sources which have been successfully applied to up until now.

- Awards for All (Lottery)
- Catchment Restoration Fund (CRF)
- Catchment Partnership (CPF)
- Catchment Partnership Action Fund (CPAF)
- Big Lottery Fund (Wales)
- Heritage Lottery Fund (HLF)
- Joint Working Partnership (NRW)
- Competitive Fund (NRW)
- Nature Fund (WAG)
- Sustainable Development Fund (AONB's)
- Conservation Fund (AONB's)
- Catchment Sensitive Farming Delivery Initiative (NE)
- Water Companies
- Wildlife Trusts
- Environment Agency
- Jean Jackson Trust
- Banister Trust

One key piece of advice is to always include running at least one ARMI training workshop and/or establishing a Riverfly hub in every project funding application (no matter how large or small the project is).
In addition, it is important to note that with any type of Government funding for projects a monitoring plan is a mandatory requirement. ARMI, or Riverfly monitoring, is an excellent way of demonstrating habitat improvement. Many funders, particularly National Lottery funds, demand a strong education and/or community involvement focus, both of which can be demonstrated through ARMI training and monitoring.

Other funding opportunities may include Local Enterprise Partnerships, Local Nature Partnerships and retailers schemes to redistribute of plastic bag taxes.
In terms of funding that may be available via statutory agencies, the Water Framework Directive may yield further opportunities. Relationship building with local area contacts (directly and through Catchment Partnerships) is essential in order to keep abreast of such opportunities and respective application requirements.

Further information about funding will soon be available via the new RP website.
If any ARMI hub or group coordinators can provide useful funding case studies, advice or tips, please refer to the 'Contact us' section of this newsletter before getting in touch.

Enforcement Undertakings

With the potential of losing European funding streams if, when and however the UK leaves the EU, it is more important than ever to explore other funding opportunities. Enforcement Undertakings can be a real winner for our rivers, the environment and local communities.

When a polluter is prosecuted in England, the Environment Agency (EA) reclaim part of their costs (not total cost recovery) and any fines administered by the Court go directly to HM Treasury, to be redistributed by Government. Mitigation measures are not applied at all times, with the environment being the loser in cases when they are not applied. When the EA accepts an Enforcement Undertaking, however, an agreed sum of money has to be spent on mitigation work and enhancement measures.

What is an Enforcement Undertaking?

An Enforcement Undertaking is a type of civil sanction which is available to certain statutory agencies (including the Environment Agency (EA) and Natural Resources Wales (NRW)) in relation to environmental offences as set out in the Regulatory Enforcement and Sanctions Act 2008. An Enforcement Undertaking takes the form of a voluntarily entered into, legally binding agreement which is offered to the relevant statutory agency where reasonable grounds to expect that an offence has been committed exist. In order for an Enforcement Undertaking to become an alternative option (to prosecution) for a statutory agency, the statutory agency must have investigated the offence and have a realistic prospect of a successful prosecution.

Following a pollution incident, the relevant statutory agency gathers evidence before passing it to their legal team. Assuming that a realistic prospect of a successful prosecution exists, a decision can then be made to either seek a prosecution or implement an Enforcement Undertaking. Increasingly, in England it would appear that, unless near certainty of a successful prosecution exists, an Enforcement Undertaking is becoming the preferred option, which is undoubtedly the best outcome for the environment.

When we are notified of any incident we do ask if the EA will consider Enforcement Undertakings, but until all their investigations are completed, which is always confidential the process has to run its course and no further comment is made. What has happened with SRT to date is obviously we know a problem has occurred and at a later date we receive an e-mail or call from the guilty party asking if we have ongoing projects on the river where the issue has occurred and offering us a sum of money. We then reply with a project plan or propose work which has been costed out beforehand. One point to remember is that the Enforcement Undertakings do not have to be on the river that was impacted and can be on a nearby waterbody of similar “nature or state”. Once we submit our plan or proposal the guilty party then submits this to the EA’s solicitors for approval. We also know that some proposals are rejected by the EA for various reasons i.e. Size of the business involved (Multi-national company etc.) or the magnitude of the pollution. When the guilty party submits its proposal to the EA we usually get a letter (I got one last week) advising us of the potential Enforcement Undertakings and offering us the funds pending the EA’s approval.

One other important point is that the EA can suggest, to a proven polluter, that they make contact with a particular organisation which can deliver river conservation projects and, therefore, be the potential recipient of Enforcement Undertaking funds. In order to nominate an organisation as a potential recipient of funds from Enforcement Undertakings, you will need to make contact the EA in your area, outlining the work you deliver, the benefits to the environment you offer, and the public engagement and citizen science value it all brings.

This list details Enforcement Undertakings (EUs) accepted by the Environment Agency between 1 June to 19 October 2018: https://www.gov.uk/government/publications/the-environment-agencys-use-of-civil-sanctions/enforcement-undertakings-accepted-by-the-environment-agency

Ch-ch-ch-ch-changes…….. (from Craig Macadam's blog 'Mostly about Mayflies')

Anyone who has studied British mayflies for any length of time will have noticed a number of changes to the scientific names of species. These name changes arise as we learn more and more about the species that we study. Before I explain why these changes happen let's have a look at the name itself. The Small dark olive is known by entomologists as *Baetis scambus*. It is part of the family Baetidae, which in turn is part of the Order Ephemeroptera. The *Baetis* part refers to the genus (and is always capitalised), the *scambus* part refers to the species. Let's use an everyday example to illustrate this.

Buses, vans, lorries, cars are all grouped together and called 'vehicles'. This is equivalent to the Order level. If we focus in a bit closer and look only at 'cars' we are looking at the equivalent of the Family level. The make of the car, for example 'Ford' is equivalent to the 'Genus' and the model of the car 'Focus' is equivalent to the species. Only models made by Ford can be linked with that genus so we can't have a 'Ford Astra' or a 'Vauxhall Focus'. In addition, all the models made by Ford will look similar, will use similar parts and will be recognisably Fords.

So a Small dark olive is *Baetis scambus*. It is similar to other species in the genus Baetis and will have features in common with other genera (the plural of genus) in the family Baetidae.

Order	Vehicles	Ephemeroptera
Family	Cars	Baetidae
Genus	Ford	*Baetis*
Species	Focus	*rhodani*

Now back to why names change. There are a number of reasons. First of all there are times when the same species is described on two separate occasions and given two different names. For example, the species we now know as a March brown was described as *Rhithrogena haarupi* by Peter Esben-Peterson in 1909, however in mid-20th century *R. haarupi* was found to be the same species as *R. germanica* which had been described by Alfred Eaton in 1885. As the description by Eaton was earlier than that of Esben-Peterson the name *R.haarupi* was synonomised with *R. germanica* and from that day on the species was known as *R. germanica*.

In the example above it was only the species name that changed. Another way that a name can change is where a species is transferred into a new genus. This usually happens when an entomologist finds that a species is more closely related to species in another genus. Traditionally this was based on morphological differences however the development of molecular techniques to look at the genetic similarity of species is leading to much more clarity on the position of species in genera (and the validity of species as a whole).

To round off this article I've included a list of British species with all their synonyms. One last thing to note is that authority and year are an important clue to what has happened to the name. The authority is the person who first described species and assigned the species name. If this appears in brackets then it means that the name has changed in some way from the original. The year helps you to work out the chronology of the various changes and allows you to search out the original species description.

COMMON NAME	SCIENTIFIC NAME	SYNONYMS	AUTHOR AND YEAR
Sepia dun	Leptophlebia marginata		(Linné, 1767)
		Ephemera marginata	Linné, 1767
		Ephemera procellaria	Schwarz, 1793-1830
		Ephemera talcosa	Stephens, 1835
		Ephemera viridescens	Geoffroy, 1785
		Leptophlebia stigma	(Pictet, 1843-1845)
		Potamanthus stigma	Pictet, 1843-1845
Claret dun	Leptophlebia vespertina		(Linné, 1758)
		Ephemera vespertina	Linné, 1758
		Euphyurus albitarsis	Bengtsson, 1909
		Leptophlebia albitarsis	(Bengtsson, 1909)
		Leptophlebia meyeri	Eaton, 1884
Purple dun	Paraleptophlebia cincta		(Retzius, 1783)

COMMON NAME	SCIENTIFIC NAME	SYNONYMS	AUTHOR AND YEAR
		Ephemera albipennis	Fabricius, 1793
		Ephemera cincta	Retzius, 1783
		Ephemera inanis	Gmelin, 1790
		Leptophlebia placita	(Bengtsson, 1917)
		Paraleptophlebia placita	Bengtsson, 1917
Turkey brown	Paraleptophlebia submarginata		(Stephens, 1835)
		Baetis reticulata	Burmeister, 1839
		Ephemera dispar	Stephens, 1835
		Ephemera gemmata	Scopoli, 1763
		Ephemera helvipes	Stephens, 1835
		Ephemera submarginata	Stephens, 1835
		Paraleptophlebia castaneus	(Pictet, 1843)
		Potamanthus castanea	Pictet, 1843-1845
		Potamanthus gerii	Pictet, 1843-1845
Scarce purple dun	Paraleptophlebia werneri		Ulmer, 1919
		Paraleptophlebia tumida	Bengtsson, 1930
Ditch dun	Habrophlebia fusca		(Curtis, 1834)
		Baetis ciliata	Strom, 1783
		Ephemera fusca	Curtis, 1834
		Ephemera minima	Müller, 1776
		Ephemera minor	Stephens, 1835
		Habrophlebia konjarensis	(Ikonomov, 1963)
		Habrophlebia mesoleuca	(Brauer, 1857)
		Potamanthus brunneus	Pictet, 1843-1845
Yellow mayfly	Potamanthus luteus		(Linné, 1767)
		Baetis mellea	Curtis, 1834
		Ephemera chlorotica	Rambur, 1842
		Ephemera flavicans	Rambur, 1842
		Ephemera hyalina	Panzer, 1804
		Ephemera luteus	Linné, 1767
		Ephemera reticulata	Geoffroy, 1785
		Eucharidis reaumuri	Joly, 1876
		Potamanthus reaumuri	(Joly, 1876)
Green drake Mayfly	Ephemera danica		Müller, 1764
		Ephemera parnassiana	Demoulin
		Ephemera cognata	Stephens, 1835
		Ephemera hispanica	Rambur, 1842
Striped Mayfly	Ephemera lineata		Eaton, 1870
Drake mackerel Mayfly	Ephemera vulgata		Linné, 1758
		Ephemera communis	Retzius, 1783
		Ephemera hispanica	Navas, 1903
Blue-winged olive	Serratella ignita		(Poda, 1761)
		Ephemerella ignita	(Poda, 1761)
		Baetis obscura	Stephens, 1836
		Cloeon fusca	Schneider, 1845
		Ephemera apicalis	Stephens, 1835
		Ephemera diluta	Stephens, 1835
		Ephemera erythrophthalma	Schrank, 1798
		Ephemera fusca	Stephens, 1835
		Ephemera ignita	Poda, 1761
		Ephemera rosea	Stephens, 1835
		Ephemera rufescens	Stephens, 1835
		Ephemerella erythrophthalma	(Schrank, 1798)
		Ephemerella lactata	Bengtsson, 1909
		Ephemerella sibirica	Tshernova

COMMON NAME	SCIENTIFIC NAME	SYNONYMS	AUTHOR AND YEAR
		Ephemerella torrentium	Bengtsson, 1917
		Potamanthus aeneus	Pictet, 1843-1845
		Potamanthus gibbus	Pictet, 1843-1845
Yellow evening dun	Ephemerella notata		Eaton, 1887
Angler's curse	Caenis beskidensis		Sowa, 1973
Angler's curse	Caenis horaria		(Linné, 1758)
		Caenis dimidiata	(Stephens, 1836)
		Caenis fennica	Aro, 1928
		Caenis pennata	Stephens, 1835
		Cloeon dimidiata	Stephens, 1836
		Ephemera brevicauda	Fabricius, 1793
		Ephemera halterata	Fabricius, 1777
		Ephemera horaria	Linné, 1758
		Ephemera parvula	Scopoli, 1763
		Ephemera plumosa	Müller, 1776
		Caenis horaria fennica	Aro, 1928
Angler's curse	Caenis luctuosa		(Burmeister, 1839)
		Caenis felsinae	Grandi, 1951
		Caenis moesta	Bengtsson, 1917
		Caenodes felsinae	(Grandi, 1951)
		Oxycypha luctuosa	Burmeister, 1839
Angler's curse	Caenis macrura		Stephens, 1835
		Brachycercus chironomiformis	Curtis, 1834
		Caenis argentata	Pictet, 1843-1845
		Caenis interrupta	Stephens, 1835
		Caenis grisea	Pictet, 1843-1845
		Caenis halterata	Eaton, 1884
		Caenis macedonica	(Ikonomov, 1954)
		Caenis oophora	Pictet, 1843-1845
Angler's curse	Caenis pseudorivulorum		Keffermüller, 1960
Angler's curse	Caenis pusilla		Navas, 1913
		Caenis pusillus	Navas, 1913
		Caenis rhenicola	Malzacher, 1976
Angler's curse	Caenis rivulorum		Eaton, 1884
		Caenis nivea	Bengtsson, 1917
Angler's curse	Caenis robusta		Eaton, 1884
		Caenis incus	Bengtsson, 1912
		Caenis miliaria	Tshernova
Large broadwings	Brachycercus harrisellus		Curtis, 1834
		Brachycercus magna	Tshernova, 1952
		Brachycercus pallida	Tshernova, 1928
		Brachycercus pallidus	Tshernova, 1928
March brown	Rhithrogena germanica		Eaton, 1885
		Rhithrogena fradgleyi	Blair, 1929
		Rhithrogena haarupi	Esben-Petersen, 1909
		Rhithrogena ussingi	Esben-Petersen, 1907
Olive upright		Rhithrogena semicolorata	(Curtis, 1834)
		Baetis semicolorata	Curtis, 1834
		Baetis semitincta	Pictet, 1845
		Ephemera fuscula	Schranck, 1798
		Ephemera speciosa	Poda, 1761
		Ephemera stigma	Gmelin, 1790
		Rhithrogena grisoculata	Bogoescu, 1933
		Rhithrogena semitincta	(Pictet, 1845)
Autumn dun	Ecdyonurus dispar		(Curtis, 1834)

COMMON NAME	SCIENTIFIC NAME	SYNONYMS	AUTHOR AND YEAR
		Baetis dispar	Curtis, 1834
		Baetis fluminum	Pictet, 1843-1845
		Baetis subfusca	Stephens, 1835
		Ecdyonurus fluminum	Auct. Pro Parte
		Ecdyonurus fluminum	(Pictet, 1843-1845)
		Ecdyonurus fluminum speciosa	Navas, 1915
		Ecdyonurus longicauda	(Eaton, 1871)
Large green dun	Ecdyonurus insignis		(Eaton, 1870)
		Heptagenia insignis	Eaton, 1870
		Ecdyonurus rhenanus	Neeracher, 1910
Large brook dun	Ecdyonurus torrentis		Kimmins, 1942
False March brown	Ecdyonurus venosus		(Fabricius, 1775)
		Baetis purpurascens	Pictet, 1845
		Ecduyrus quaesitor	Eaton
		Ecdyonurus nigrimana	(Brauer, 1876)
		Ecdyonurus purpurascens	(Pictet, 1845)
		Ecdyonurus quaesitor	(Eaton, 188?)
		Ephemera berolinensis	Müller, 1776
		Ephemera nervosa	Villers, 1789
		Ephemera rufa	Rambur, 1842
		Ephemera venosa	Fabricius, 1775
		Heptagenia nigrimana	Brauer, 1876
Scarce dusky yellowstreak	Electrogena affinis		(Eaton, 1885)
		Ecdyonurus affinis	(Eaton, 1885)
		Electrogena trimaculata	(Ikonomov, 1963)
		Heptagenia affinis	Eaton, 1885
		Heptagenia trimaculata	Ikonomov, 1963
Dusky yellowstreak	Electrogena lateralis		(Curtis, 1834)
		Baetis lateralis	Curtis, 1834
		Baetis obscura	Pictet, 1843-1845
		Ecdyonurus concii	Grandi, 1953
		Ecdyonurus rivulorum	Navas, 1928
		Electrogena rivulorum	(Navas, 1928)
		Heptagenia concii	Grandi, 1953
		Heptagenia maculata	Ikonomov
Brown May dun	Kageronia fuscogrisea		(Retzius, 1783)
		Heptagenia fuscogrisea	(Retzius, 1783)
		Ecdyonurus confinis	Tshernova, 1928
		Ecdyonurus convergens	Aro, 1910
		Ecdyonurus rossicus	Tshernova, 1928
		Ephemera fuscogrisea	Retzius, 1783
		Heptagenia confinis	(Tshernova, 1928)
		Heptagenia convergens	(Aro, 1910)
		Heptagenia rossica	(Tshernova, 1928)
		Heptagenia volitans	Eaton, 1870
Scarce yellow May dun	Heptagenia longicauda		(Stephens, 1836)
		Baetis cerea	Pictet, 1843-1845
		Baetis longicauda	Stephens, 1836
		Ephemera flavipennis	Dufour, 1841
		Heptagenia flavipennis	(Dufour, 1841)
Yellow May dun	Heptagenia sulphurea		(Müller, 1776)
		Baetis costalis	Curtis, 1834
		Baetis cyanops	Pictet, 1843-1845
		Baetis elegans	Curtis, 1834

COMMON NAME	SCIENTIFIC NAME	SYNONYMS	AUTHOR AND YEAR
		Baetis marginalis	Burmeister, 1839
		Ephemera bioculata	Römer, 1789
		Ephemera citrina	Hummel, 1825
		Ephemera ferruginea	Gmelin, 1790
		Ephemera helvola	Sulzer, 1776
		Ephemera leucophthalma	Strom, 1783
		Ephemera lutea	Stephens, 1835
		Ephemera straminea	Curtis, 1834
		Ephemera sulphurea	Müller, 1776
		Heptagenia elegans	(Curtis, 1834)
		Heptagenia soldatovi	Tshernova
		Arthroplea congener	Bengtsson, 1909
		Arthroplea elegans	(Bengtsson, 1908)
		Arthroplea frankenbergeri	Balthasar, 1937
		Arthroplea mirabilis	(Aro, 1910)
		Arthroplea southi	(Blair, 1929)
		Cinygma mirabilis	Aro, 1910
		Haplogenia southi	Blair, 1929
		Remipalpus elegans	Bengtsson, 1908
Northern summer mayfly	Siphlonurus alternatus		(Say, 1824)
		Baetis alternatus	Say, 1824
		Siphlonurus linnaeanus	(Eaton, 1871)
		Siphlonurus oblitus	(Bengtsson, 1909)
		Siphlonurus thomsoni	(Bengtsson, 1909)
		Siphlurella oblita	Bengtsson, 1909
		Siphlurella thomsoni	Bengtsson, 1909
		Siphlurus linnaeanus	Eaton, 1871
Scarce summer mayfly	Siphlonurus armatus		(Eaton, 1870)
		Siphlonurus latus	Bengtsson, 1909
Summer mayfly	Siphlonurus lacustris		(Eaton, 1870)
		Siphlonurus nuessleri	Jacob, 1972
		Siphlonurus pyrenaicus	Navas, 1930
		Siphlonurus zetterstedti	(Bengtsson, 1909)
		Siphlurus lacustris	Eaton, 1870
Upland summer mayfly	Ameletus inopinatus		Eaton, 1887
		Ameletus alpinus	Bengtsson, 1913
Dark olive	Baetis atrebatinus		Eaton, 1870
		Labiobaetis atrebatinus	(Eaton, 1870)
Scarce olive	Baetis buceratus		Eaton, 1870
		Baetis grandii	Grandi, 1948
		Baetis scanicus	Bengtsson, 1917
Scarce iron blue	Baetis digitatus		Bengtsson, 1912
		Nigrobaetis digitatus	(Bengtsson, 1912)
Pale watery olive	Baetis fuscatus		(Linné, 1761)
		Baetis andalusicus	Navas, 1911
		Baetis autumnalis	Curtis, 1834
		Baetis bioculatus	(Linné, 1758)
		Baetis flavescens	Curtis, 1834
		Baetis venustulus	Eaton, 1885
		Ephemera bioculata	Linné, 1758
		Ephemera culiciformis	Linné, 1758
		Ephemera culiciformis	Olivier, 1791
		Ephemera flava	Schranck, 1776

COMMON NAME	SCIENTIFIC NAME	SYNONYMS	AUTHOR AND YEAR
		Ephemera fuscata	Linné, 1761
		Ephemera lutea	Geoffroy, 1785
		Ephemera notata	Gmelin, 1790
Iron blue	Baetis muticus		(Linné, 1758)
		Ephemera mutica	Linné, 1758
		Ephemera striata	Linné, 1767
		Baetis dissimilis	Navas, 1924
		Baetis furcatus	Navas, 1933
		Baetis pumilus	(Burmeister, 1839)
		Baetis pumilus dissimilis	(Navas, 1924)
		Cloe pumilus	Burmeister, 1839
Southern iron blue	Baetis niger		(Linné, 1761)
		Baetis incurvus	Bengtsson, 1912
		Ephemera nigra	Linné, 1761
Large dark olive	Baetis rhodani		(Pictet, 1844)
		Cloe rhodani	Pictet, 1844
		Baetis bocagii	Eaton, 1885
		Baetis iberi	Navas, 1913
		Baetis maderensis	(Hagen, 1865)
		Baetis pusillus	Bengtsson, 1912
		Baetis wallengreni	Bengtsson, 1912
		Cloe maderensis	Hagen, 1865
Small dark olive	Baetis scambus		Eaton, 1870
		Baetis hispanus	Navas, 1915
Medium olive	Baetis vernus		Curtis, 1834
		Baetis finitimus	Eaton, 1870
		Baetis phaeopa	Stephens, 1836
		Baetis tenax	Eaton, 1870
		Ephemera dubia	Curtis, 1835
		Ephemera testacea	Gmelin, 1790
Small spurwing	Centroptilum luteolum		(Müller, 1776)
		Baetis carnea	Curtis, 1834
		Centroptilum diaphanum	(Müller, 1776)
		Centroptilum halteratum	(Burmeister, 1839)
		Centroptilum ochraceum	(Stephens, 1836)
		Centroptilum translucidum	(Pictet, 1843-1845)
		Cloe halterata	Burmeister, 1839
		Cloe translucida	Pictet, 1843-1845
		Cloeon albipenne	Stephens, 1836
		Cloeon hyalinatum	Stephens, 1836
		Cloeon ochraceum	Stephens, 1836
		Ephemera caudata	Strom, 1783
		Ephemera diaphana	Müller, 1776
		Ephemera luteola	Müller, 1776
Pond olive	Cloeon dipterum		(Linné, 1761)
		Cloe affinis	Rambur, 1842
		Cloe fusca	Schneider, 1845
		Cloe virgo	Pictet, 1843-1845
		Cloeon consobrinum	Stephens, 1835
		Cloeon dimidiatum	(Curtis, 1834)
		Cloeon marmoratum	Curtis, 1834
		Cloeon obscurum	Curtis, 1834
		Cloeon pallidum	Leach, 1815
		Cloeon robustum	Bogoescu, 1933

COMMON NAME	SCIENTIFIC NAME	SYNONYMS	AUTHOR AND YEAR
		Cloeon rufulum	(Müller, 1776)
		Cloeon russulum	Eaton, 1871
		Cloeon sinense	Walker, 1853
		Cloeon szegedi	Jacob, 1969
		Cloeon unicolore	Curtis, 1834
		Ephemera annulata	Müller, 1776
		Ephemera dipterum	Linné, 1761
		Ephemera rufulum	Müller, 1776
Lake olive	Cloeon simile		Eaton, 1870
		Cloeon hovassei	(Verrier, 1949)
		Procloeon hovassei	Verrier, 1949
Pale evening dun	Procloeon bifidum		(Bengtsson, 1912)
		Cloeon bifidum	Bengtsson, 1912
		Procloeon lychnidense	Ikonomov, 1962
		Procloeon rufulum	(Eaton, 1885)
		Procloeon pseudorufulum	Kimmins, 1957
Large spurwing	Procloeon pennulatum		(Eaton, 1870)
		Pseudocentroptilum pennulatum	(Eaton, 1870)
		Centroptilum pennulatum	Eaton, 1870

Contact us

The Riverfly Partnership
c/o The Ferry Landing, Far Sawrey, Ambleside, Cumbria, LA22 0LP

Ben Fitch
ARMI Project Manager
Email: ben@riverflies.org

Alex Domenge
ARMI Project Assistant
Email: ami@riverflies.org

www.riverflies.org

Riverfly Partnership

@Riverflies