



FRESHWATER  
BIOLOGICAL  
ASSOCIATION

# From Riverfly to 'Lakefly'

Trine Bregstein

# History of the partnership

Leckford 1998- Photo courtesy of Cyril Bennett



# Riverflies – what are they?



Up-wing flies  
(Mayflies)  
Ephemeroptera



Caddisflies  
Trichoptera



Stoneflies  
Plecoptera



# The 8 RMI groups



Caseless caddisfly



Olives



Flat Bodied Mayfly



Gammarus



Cased caddisfly



Mayfly



Blue-Winged Olive



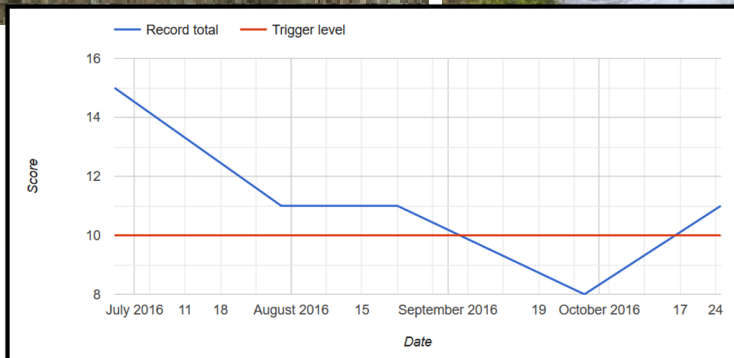
Stonefly

# Methodology

Invertebrate sampling involves kick sampling and hand searching of larger stones, the river is then scored based on the presence/abundance of different invertebrate groups, scored on pollution sensitivity.

Abundance	Score	Estimated Number
1-9	1	Quick Count
10-99	2	Nearest 10
100-999	3	Nearest 100
1000+	4	Nearest 1000

Simplified version of BMWP monitoring









# Monitoring



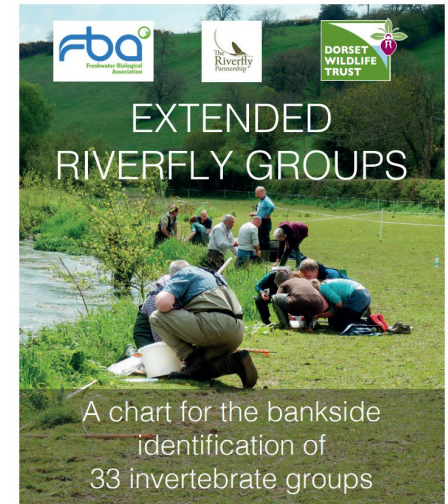
RMI

8 groups

Blackfly larvae	Beetles	Snails
<p><b>Simuliidae</b></p>  <ul style="list-style-type: none"> <li>No legs but one proleg by the head</li> <li>Segmented body (less than 15)</li> <li>Bowling pin/dumbbell shape</li> <li>Often stuck to rocks/tray/plants</li> <li>Often waft heads in water</li> </ul>	 <ul style="list-style-type: none"> <li>3 pairs of jointed legs</li> <li>Antennae may be visible</li> <li>Will swim or crawl along the bottom of the tray</li> <li>Wings present enclosed in hardened cases</li> <li>Sometimes confused with terrestrial beetles</li> <li>Aquatic beetles do not have iridescent shine</li> </ul>	 <ul style="list-style-type: none"> <li>Lives in a shell</li> <li>Shells highly variable, can be flattened or pointed</li> <li>Don't confuse with bivalves or terrestrial snails</li> <li>Often stick to bottom of the tray</li> </ul>
Freshwater Hoglouse	Worms	Leeches
<p><b>Asellidae</b></p>  <ul style="list-style-type: none"> <li>Looks like a woodlouse</li> <li>Crawls along the bottom of the tray</li> <li>Dorsally flattened</li> </ul>	<p><b>Oligochaeta</b></p>  <ul style="list-style-type: none"> <li>Wiggle</li> <li>No legs</li> <li>15+ segments</li> <li>Long, thin cylindrical body</li> <li>May sometimes be confused with terrestrial worms or midge larvae</li> <li>Aquatic worms are a lot smaller and much thinner than terrestrial worms. The head is indistinct, and they lack a clitellum (raised band)</li> </ul>	 <ul style="list-style-type: none"> <li>No legs</li> <li>Dorsally flattened</li> <li>Sucker present at each end of the body</li> <li>Moves by looping (using the suckers)</li> <li>Often stuck to rocks - check tray and bucket as you empty</li> <li>Variety of shapes and colours</li> </ul>

Urban

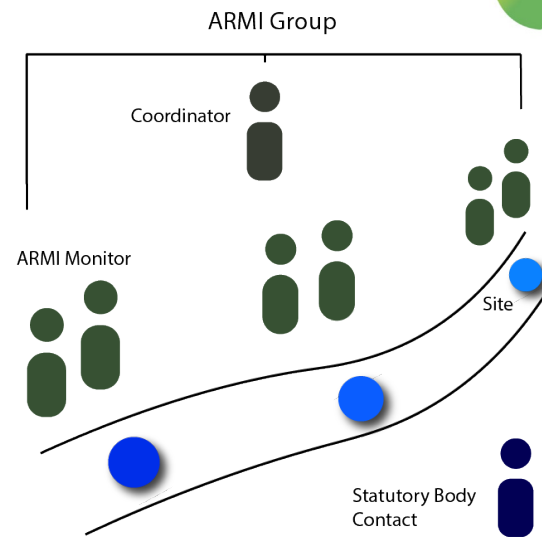
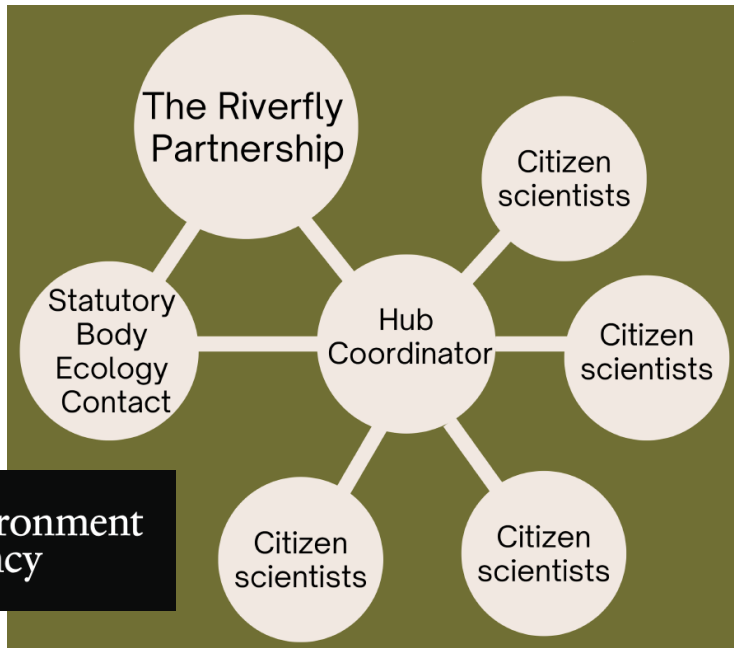
14 groups



Extended

33 groups

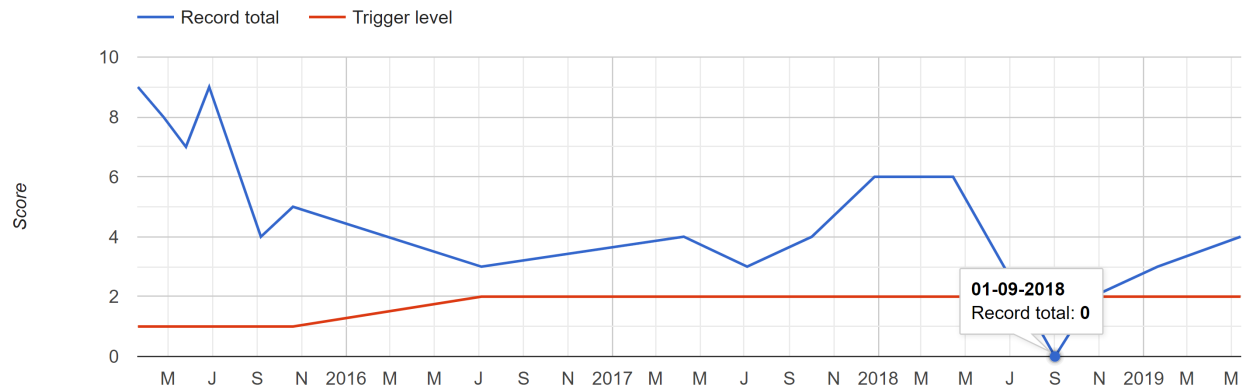
# How the partnership works



The Wye & Usk Foundation



# Case studies – past and present



**Yorkshire Water fined £1.6M for sewage pollution**

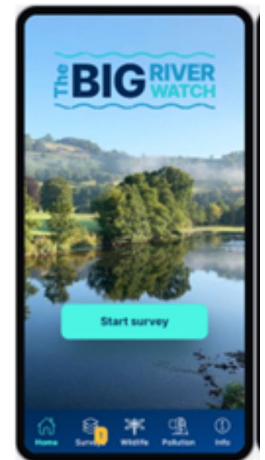




# Current stats and looking to the future

In 2022 to 2023 (1/4/22 to 31/3/23) Riverfly volunteers:

- uploaded **4253** survey records to the database
- **461** active samplers
- **850** sites monitored across **355** rivers and **103** catchments
- **224** trigger level alerts (indicating a possible pollution impact) passed on

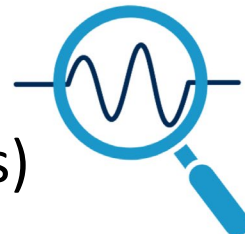


44,332 total records in the database

309 monthly records

3168 total sites

70 hubs (>250 groups)



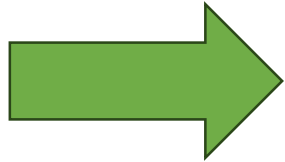
# CaSTCo

Making sure that people count at the heart of rivers' recovery



# How to get involved

SCAN



Send us an email to [info@riverflies.org](mailto:info@riverflies.org), tell us where you are so we can link you with your nearest hub.

Follow us on socials, X (formerly Twitter), Facebook and Instagram.

# LAKEFLY - how you can help

Can the Riverfly model be used as the basis for a standing waters citi-sci project to provide an early warning system for environmental degradation or acute pollution events?

What should be looked at? Macro invertebrates, macrophytes? Hydro-geomorphology? Naturalness? Water quality sampling? Amphibians? How to assess a whole lake?



Send an email to  
[RDavies@fba.org.uk](mailto:RDavies@fba.org.uk)