www.wildfish.org smartrivers@wildfish.org

#### Lauren Harley SmartRivers Project Manager Dr Sam Green Freshwater Ecologist

## SmartRivers





### We're bridging the national monitoring gap in UK rivers

# SmartRivers is the <u>highest tier</u> of citizen science invertebrate monitoring

- Monitoring in spring and autumn
- Samples preserved and identified away from the riverbank using microscopes
- Identify to species-level as much as possible.





**104** Rivers covered by the project to date

4,584

Hours of training undertaken by volunteers to date



Organisations have signed up to host hubs

We are active in England, Scotland and Wales. Our ambition is that all rivers are SmartRivers.

#### Enrolment

- River signs up, hosted by a local organisation
- Hub lead from the group
- Around 10 volunteers required
- River sites chosen based on objectives

## Training & Benchmarking

- Two days of volunteer training (Sample technique, sample identification)
- Professional benchmarking surveys in spring and autumn

Volunteer monitoring

Data &

reporting

- Hub begins independent sampling
- Chooses self identification or 'sample and send' pathway
- Quality control mandatory for self ID hubs
- Seasonal reporting, twice a year
- Time series reporting for multi-year datasets
- Data presentation to stakeholders and policy support from WildFish
- All data open-access for transparency

Process

## Why bother going the extra level with ID?

# Outputs

1. Invertebrate abundance and diversity profiles

The invertebrate records produced allow us to assess changes in invertebrate diversity and abundance, to highlight areas at risk.



2. Water quality 'score cards'

Using the list of identified invertebrate species at each site, we generate water quality 'scorecards' grading the impact of organic pollution, nutrient enrichment, sediment, chemicals and flow stress. SmartRivers data is all open access via the SmartRivers database.

**3.** Usable data to work with decision makers

SmartRivers data is useful for regulators, especially where professional analysis has been used (benchmark surveys and hubs using the 'sample & send' service).



## How is this even possible with volunteers?

Access to professional analysis

- Benchmarking
- Sample & send pathway

## Expected species lists

 Only becoming familiar with species from your own river. Anything not in this list must be verified

River name Date last updated:	te last updated: 22/01/2024			Ilways try to ID to the lowest taxonomic level possible. But, if animals are damaged or have deteriorated you may ble to get to genus or family level, hence why there is a mixture of these in your list. It is much better to stick wit irroader classification rather than to force it and be incorrect. Always send us a photo and check if you are unsure families are highlighted in yellow. For caddisflies, mayflies and stoneflies you can use our family tools to ID to fi evel, which can help with getting down to species-level. Where genus is listed (in green) there are typically no in Corresponding image library files are linked where available. Species gaps (noted by dashes) have been flagged priority. We are working on getting specimens of these animals to our photographer.							
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Cased Caddisflies	Links	Caseless Caddisflies	Links	Mavflies	Links	Stoneflies	Links	Beetles	Links	Molluscs	T
Glossosomatidae		Hydropsychidae		Baetidae		Perlodidae		Dytiscidae	https://	Ancylus fluviatilis	h
Agapetus		Hydropsyche		Baetis		Isoperla grammatica	https://c	Platambus maculatus	https://	Sphaeriidae	h
Agapetus delicatulus	#N/A	Hydropsyche angustipennis	https://	Baetis muticus	https://						Г
Agapetus fuscipes	https:	Hydropsyche pellucidula	https:/	Baetis rhodani/atlanticus	https://	Nemouridae		Elmidae		Anisus vortex	h
		Hydropsyche siltalai	https://	Baetis scambus/fuscatus	https://	Nemoura avicularis	https://c	Elmis aenea	https://	Physa	h
Limnephilidae								Limnius volckmari	https://	Planorbis	#
Anabolia nervosa	https:	Psychomyiidae		Ephemeridae				Oulimnius	https://	Potamopyrgus antipodarun	n <u>h</u> i
Chaetopteryx villosa	https:	Lype reducta	#N/A	Ephemera danica	https://					Lymnaea stagnalis	h
Halesus digitatus	#N/A							Hydraenidae		Ampullaceana balthica	h
Halesus radiatus	https:	Rhyacophilidae		Ephemerellidae				Helophoridae	https://	Bathyomphalus contortus	h
Limnephilus		Rhyacophila dorsalis	https://	Serratella ignita	https://			Noteridae			
Limnephilus lunatus	https:										
Potamophylax cingulatus	https:			Heptageniidae				Gyrinidae			
Glyphotaelius pellucidus	https:			Rhithrogena	https://			Orectochilus villosus	https://		
Goeridae				Caenidae				Scirtidae	https://		
Silo pallipes	#N/A			Caenis luctuosa	https://						
Sericostomatidae											
Sericostoma personatum	https:							Bugs			
								Velia	#N/A		
Louise endered			1								



#### **Picture matching**, not keys

High resolution ulletinvertebrate image library with ID features

Continual support

- Quality control for • volunteer ID
- ID support from experts •



## How is this even possible with volunteers?

Dr Cyril Bennett MBE