



Citizen Science Water Quality Monitoring

Friends of the Lugg (FOL)

Part of a Cardiff University project using citizen science to investigate water quality in the Wye Catchment throughout England and Wales



Why a need for FOL and how it was set up?

- Concern for Wye: Powys and Herefordshire poultry statistics , concern algal blooms, ecological deterioration (water crowfoot).
- Lugg/Arrow catchment in Wales.
- Brecon and Radnor CPRW & RWT – partnership working
- FOL Coordinators:

Christine Hugh-Jones (CPRW)

Sarah Woodcock (RWT Green Connections Manager)

Phil Ward (RWT Green Connections Volunteer Officer)



Equipment purchasing

- No statutory funding - England/Wales issue
- Securing funding: £10K from 4 sources
- FOUW/FOL protocols same.
- WUF help with first order
- Difficult to ensure regular supplies - ££ and delays
- Distribution solution: central town shop.



Health & Safety and Insurance

- FUL Volunteers added to RWT insurance
- RA covered fully during training sessions
- Vol form completed, lone working buddy contact

Volunteer Information Details

Volunteer Role/ Location
 Key Contact/Manager
 Name |
 Address
 Postcode
 Telephone (Home and Mobile)
 Email
 Date of Birth
 Emergency Contact name:
 Relationship to you:
 Contact telephone number
 Lone Working Buddy (if different from above)
 Contact Name:

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Friends of the Upper Lugg
 RWT Risk Assessment and training log for Water Sampling of River Wye and Tributaries, from the bank and in shallow water. To be issued to all surveyors.
 Assessed by: Sarah Woodcock (RWT) (in liaison with HWT and FOUW)
 Date: June 2021
 Date of Review: June 2022

Hazard	Potential Harm	Likelihood	Severity	Risk Factor	Precautions	Further Control
Infection from Coronavirus	Illness, potentially fatal or with long term health complications	4	5	20	Follow current government rules around Coronavirus. Follow NHS guidance on what to do if suspect a Covid-19 infection https://www.nhs.uk/conditions/coronavirus-covid-19/symptoms/ and self-isolate at home for a minimum of 10 days. Report sickness to RWT as appropriate. If	Ensure dated records are kept of volunteer activity.

Training	Date Acquired	Trainer
Phosphate strips		
Hanna tester use		
Nitrate strips		
TDS and temperature readings		
Secchi Tubes		
Study training videos provided		
H&S advice – agree to work to RWT H&S systems.		
Lone working buddy: Catchment Coordinator contact details for buddy:		

Risk Understood and training received.
 By:
 At:
 Date:

Recruiting volunteers and arranging training

- Initial online introduction for FOL citizen scientists (28th May)
- Equipment practical testing session (3rd June)
- Volunteer online training (16th June)
- 1st Practical training day (24th June)
- 2nd Practical training day (30th June)
- 3rd Practical training day & Hanna training (10th Sep)



Credit Jamie Ramsey

Central training location & how training went

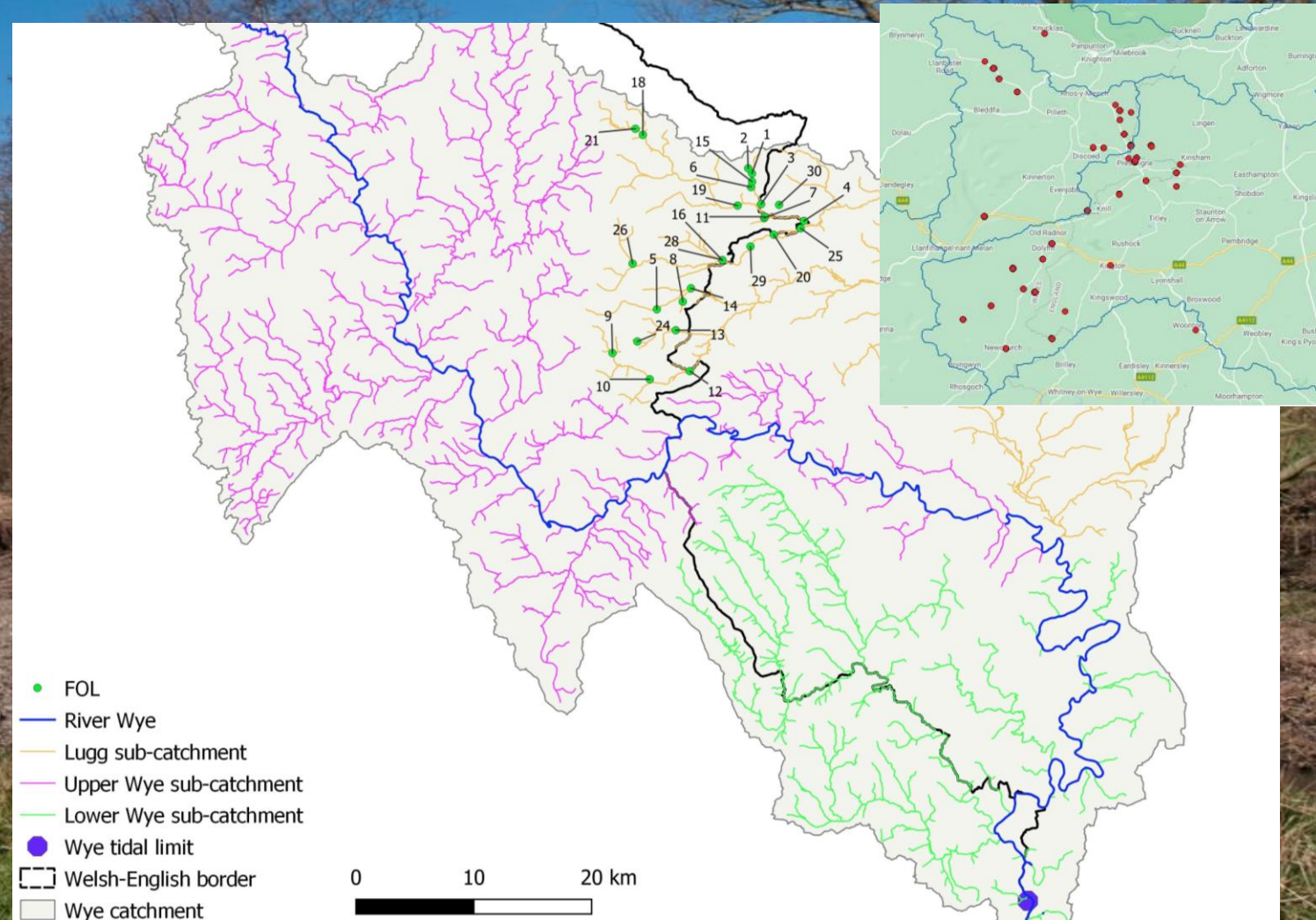
- Outdoor location needed due to maintaining social distancing
- Wents Meadow, Presteigne
- Easy access to river, barns for cover, parking, toilets
- 3 training sessions and 1 hanna checker training done



Credit Christine Hugh-Jones

Site monitoring selection by volunteers

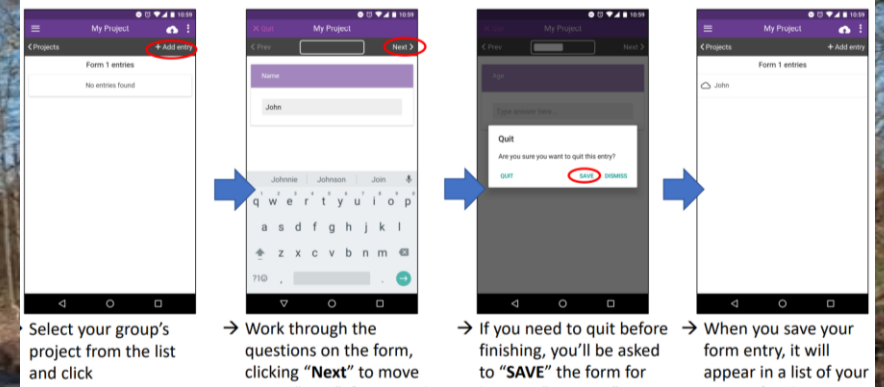
- OS maps
- Vols pinpointed locations
- Currently 33 active sites



Epicollect & data entry

- Epicollect: essential but project set-up experimental
- Range of IT abilities and devices or lack of!
- Problems
 - Google account ID and password
 - grid co-ordinates of sites
 - keeping central register
- Ongoing issues
 - public or private (Google IDs)
 - helping volunteers enter data/access computer version
 - voluntary administrative load for amateur!

3. Entering data into the Epicollect app



Quotes & feedback from volunteers

- “Great to be part of recording solid verifiable data which the statutory bodies won’t be able to ignore. Their actions will have to follow the citizen science!”
- "I've floated on the Wye; I've swum in the Wye; and now you have to wash after paddling in it. We HAVE to turn this around."
- “Being involved has been a great way for me to learn about the different ways our crowded society might impact on our rivers, and has hopefully helped me contribute something positive towards restoring their health.”
- “We hope that the powers that be will use the data we collect to implement stringent measures to save our beautiful rivers.”
- “The River Lugg flows just a couple of fields away from my house, but is an essential part of my life. I walk past it regularly, enjoy the wildlife that lives off it and occasionally catch fish from it. The FOL Citizen Science Project has helped me to understand more about the river and allowed me to be a part of ensuring that the quality of its water is monitored and maintained”.

Volunteer retention & motivation

- Current high retention rate
- Monthly group catch up zoom meetings
- Planned January 2022 get together



Credits
Christine Hugh-Jones

Future...

- Training revision session
- Catchment data & plans for data analysis
- Feedback and interaction with NRW
- Pro bono technical support?
- To broaden volunteer knowledge and enthuse them further, planning to include wildlife themed sessions such as river invertebrate kick sampling, identification session and water quality scoring assessment