



Water Quality Monitoring Network Viewers Pack

Aims & Objectives of the Water Quality Monitoring Network

Anglers are passionate about the places they fish and have been working on the preservation and restoration of freshwater habitats since many of the clubs and syndicates they belong to were founded. Whether it's club work parties, volunteering on River's Trust projects, undertaking riverfly monitoring, litter picks or bailiffing, anglers are a potent force for good and often unsung heroes.

The Water Quality Monitoring Network (WQMN) aims to harness the power of angling clubs and anglers to understand the quality of water across England and to establish a solid foundation of data.

This solid foundation of data will be used to better understand the factors affecting water quality, aid in the development of effective solutions to improve water quality and will provide the Angling Trust with evidence to support its campaigning.

Methodology

The WQMN is formed from angling clubs, anglers and other volunteers who undertake regular monitoring activities on rivers across England. Angling clubs recruit and organise teams of local monitors who are allocated monitoring sites. On a regular and consistent basis monitors gather a range of data for each site. This will include as a minimum:

- Phosphates
- Nitrates
- Electrical Conductivity
- Temperature
- Ammonia (selected sites only)

Monitors will also be asked to note:

- Water levels
- Flow rates
- Presence of algal blooms
- Presence of pollution

Monitors record data in situ using the Epicollect5 data gathering platform on their mobile phone with the option to record data at home using a PC. Epicollect5 is a proven solution which is free and easy to use.

The methodology is based upon a proven approach developed by the Wye Salmon Association with the help and support of Cardiff University.

A range of resources to support volunteers and coordinators are available on the Wye Catchment Partnership website courtesy of Cardiff University and the Wye Catchment Partnership: [Wye Catchment Collaborative Monitoring Network Website](#)

Using Epicollect5 to access data

Volunteers will be using Epicollect to record information relating to the samples they take.



So, why are we using Epicollect?

- It is completely free!
- It allows us to create our own projects and forms
- It allows total customisation of forms
- It is user friendly
- It has all the key features we need
- It has a smartphone app as well as a web browser interface

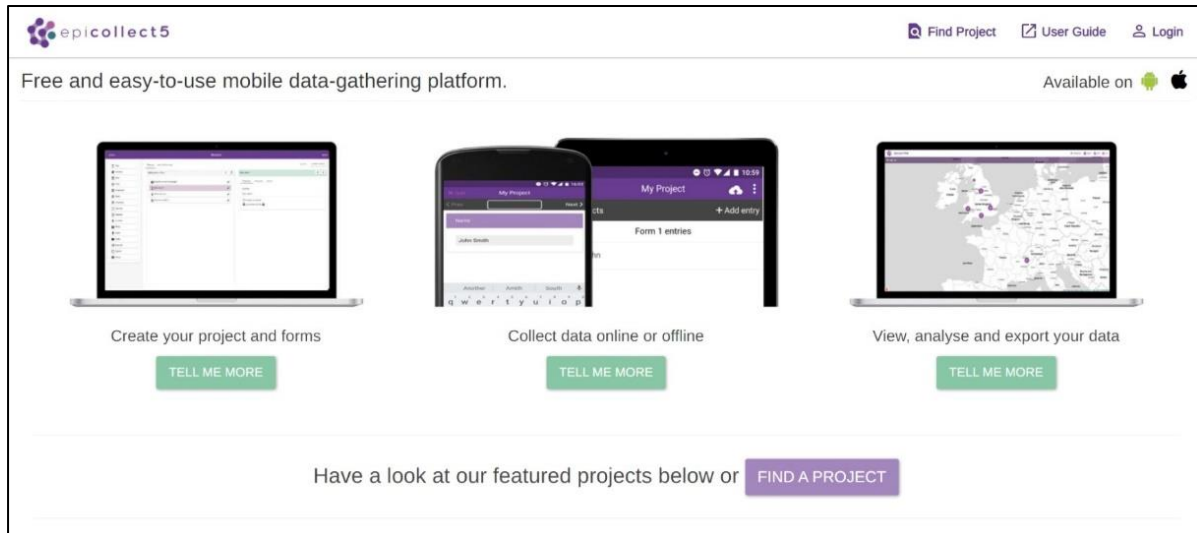
What does Epicollect do?

- Allows you to collect, store, view, and download geolocated data
- Can be used as an app on your mobile smart phone
- Can be accessed on a computer via a web browser

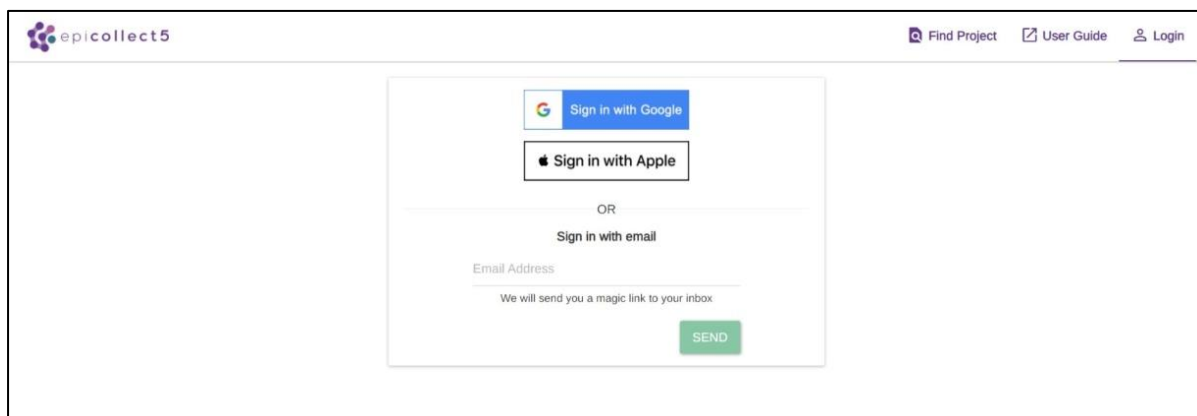
Creating a free Epicollect account

You will need to create a free account online to get started:

1. Go to: <https://five.epicollect.net/>



2. Select log in in the top right-hand corner



Currently Epicollect makes signing up easier for those with Google accounts, but it is also possible to use an Apple account or another email address. You do not need a Gmail address to create a free Google account

More information about registering with Epicollect can be found here:

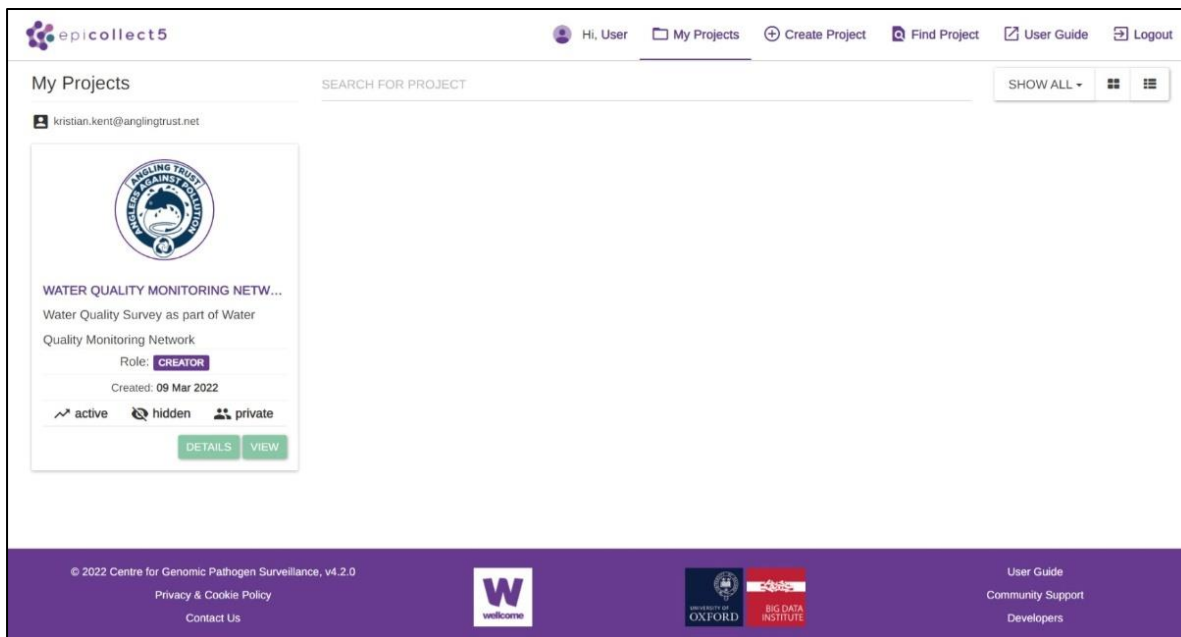
<https://docs.epicollect.net/web-application/manage-users>

You can learn more about Epicollect's privacy policy here:

<https://docs.epicollect.net/about/privacy-policy>

Accessing the WQMN Project through a web browser

Once you are logged in click on 'My Projects'. If the WQMN Project is not shown search for it by typing "Water Quality Monitoring Network" into the 'Search For Project' field.



Note: To access the WQMN Project you must have been added to the Epicollect system as a Viewer by the WQMN Coordinator. If you can't see the WQMN Project check with the WQMN Coordinator to make sure you have been added:

kristian.kent@anglingtrust.net

Roles in Epicollect

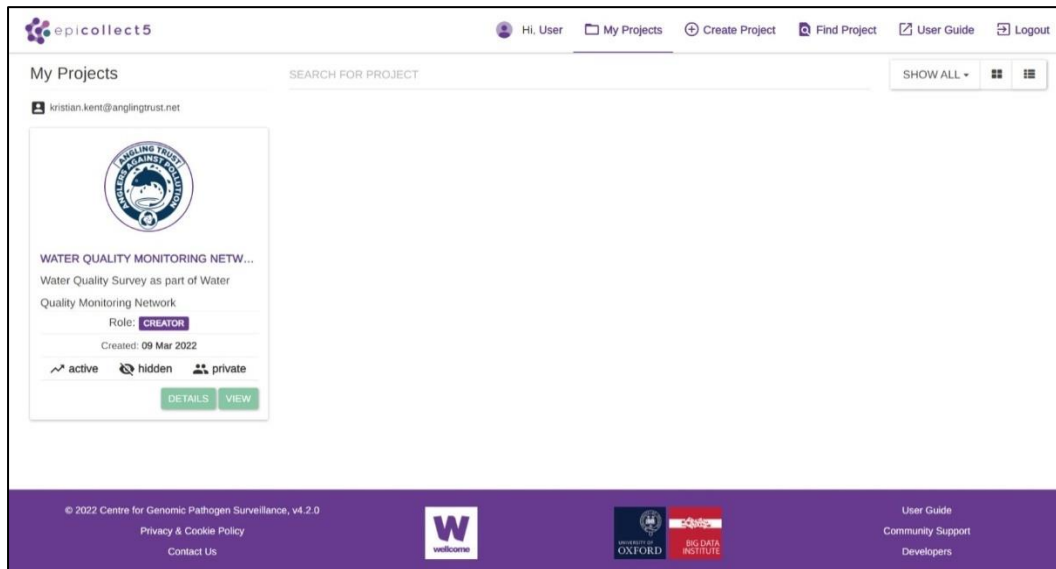
There are two roles that are relevant to you in Epicollect.

Role:	Authorities:
Collector	A project collector has basic access to the project, including viewing and uploading only their own data via the mobile client/web. A collector cannot make any changes to the project.
Viewer	A project viewer gets READ ONLY access to a project. Viewers can view all the data collected by any other user but they cannot make any changes to the data or access any of the project settings.

Accessing data in Epicollect

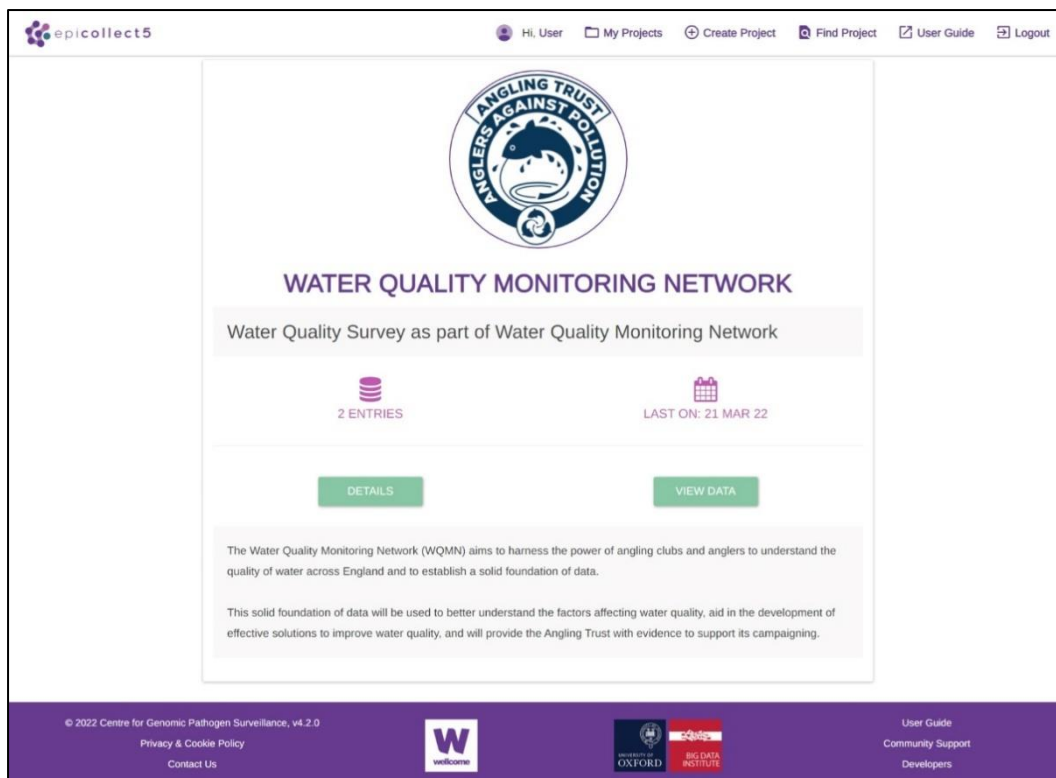
Once your volunteers start recording data it can be accessed through Epicollect.

1. On the My Projects screen click on the 'View' button.



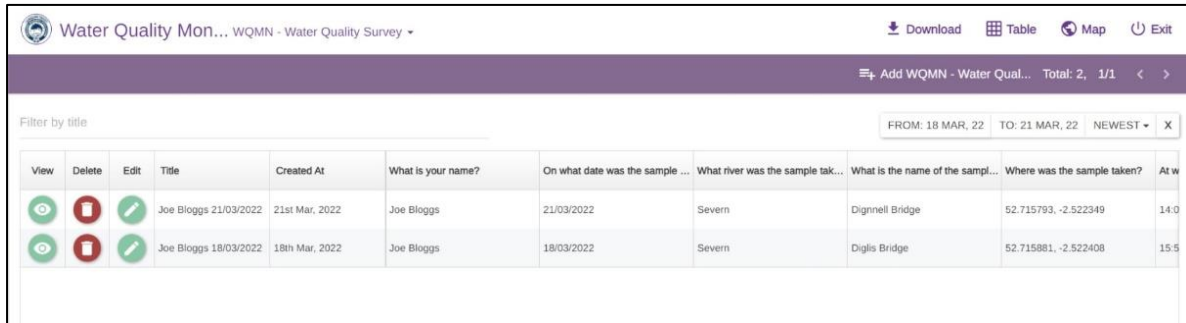
The screenshot shows the Epicollect5 interface. At the top, there's a navigation bar with 'Hi, User', 'My Projects', 'Create Project', 'Find Project', 'User Guide', and 'Logout'. Below this is a search bar for projects. The main content area displays a project card for 'WATER QUALITY MONITORING NETWORK' with the following details: Role: CREATOR, Created: 09 Mar 2022, and status options: active, hidden, private. A 'VIEW' button is located at the bottom right of the card. The footer contains copyright information for the Centre for Genomic Pathogen Surveillance, v4.2.0, and logos for Wellcome, University of Oxford, and Big Data Institute.

2. Click on 'View Data'



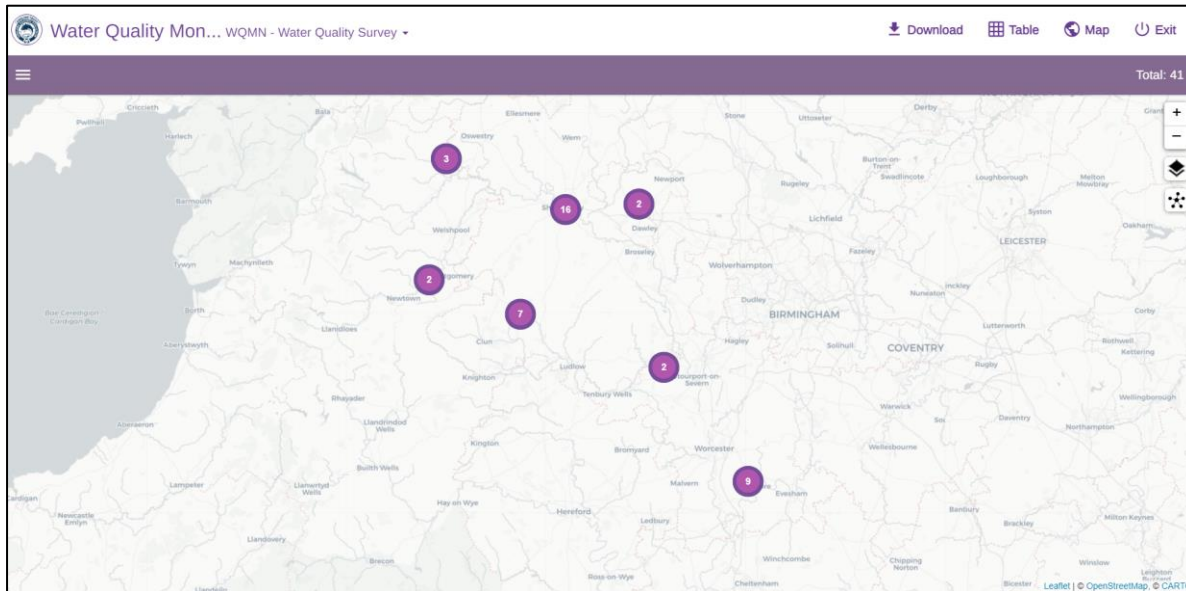
The screenshot shows the 'View Data' page for the 'WATER QUALITY MONITORING NETWORK' project. The page features the Angling Trust logo at the top, followed by the project title and subtitle. Below this, there are two statistics: '2 ENTRIES' and 'LAST ON: 21 MAR 22'. A 'VIEW DATA' button is located in the center. At the bottom, there is a paragraph of text explaining the purpose of the Water Quality Monitoring Network (WQMN) and its goals. The footer is identical to the previous screenshot, showing copyright information and logos for Wellcome, University of Oxford, and Big Data Institute.

3. You will see all the records in Table format.



View	Delete	Edit	Title	Created At	What is your name?	On what date was the sample ...	What river was the sample tak...	What is the name of the sampl...	Where was the sample taken?	At w
			Joe Bloggs 21/03/2022	21st Mar, 2022	Joe Bloggs	21/03/2022	Severn	Dignnell Bridge	52.715793, -2.522349	14.0
			Joe Bloggs 18/03/2022	18th Mar, 2022	Joe Bloggs	18/03/2022	Severn	Diglis Bridge	52.715881, -2.522408	15.5

4. From here you can also view the records in Map view.



Interpreting your results

Electrical Conductivity - Significantly elevated electrical conductivity can indicate that pollution has entered the river. A measure of electrical conductivity cannot tell you what the pollutant is, but it can help identify that there is a problem that may harm invertebrates and/or fish. Electrical conductivity may be high in a river without any visible effects on the clarity of the river water. Any human activity that adds inorganic, charged chemicals to a river will alter the electrical conductivity. For example, electrical conductivity may be higher in a river downstream of a sewage treatment works due to chemicals such as chloride and phosphate from household products. Winter road runoff, containing salt, can be very high in electrical conductivity. If this runoff reaches rivers, then it may, depending on the quantity of water, temporarily elevate the electrical conductivity in the river.

Phosphate - Standards for Phosphorus in UK Rivers were introduced under the Water Framework Directive (WFD) and associated Regs/Directions in 2009 and were updated in 2015. The standards are site-specific and depend upon the altitude and alkalinity of the site. The standards for good ecological status (close to natural) in Rivers are broadly in the range 0.077 – 0.306 ppm of Orthophosphate (PO_4^{3-}), as annual means. This is as measured by volunteer's Hanna Colorimeter. Your local EA Fisheries Team should be able to tell you what your local standards are.

Remember, the Phosphate Checker upper limit is 2.5 ppm, the lower test limit is 0.00 ppm with an accuracy of ± 0.04 ppm. So, a 0.00 ppm reading does not mean there is no phosphate present, it will be between 0.00 and 0.04 ppm. A 2.5 ppm reading does not mean that is the total phosphate, it means that it is in excess of 2.5 ppm.

Nitrate - There are no ecological status standards for Nitrogen in Rivers. The Environment Agency's approach is to focus on Phosphate as the main cause of river eutrophication and the nutrient they are most able to reduce to levels that will improve the ecology. There is a standard for Lakes and Reservoirs, which is 0.75 – 1.5 mg/l (ppm). Natural levels of Nitrate in freshwater are typically low, generally well below 5 ppm.

Ammonia - Standards for Ammonia in UK Rivers are also set out in the Water Framework Directive (WFD). As with Phosphate, standards are site-specific and depend upon the altitude and alkalinity of the site. Your local EA Fisheries Team should be able to tell you what your local standards are. The standards for good ecological status (close to natural) in rivers and lakes are broadly in the range 0.3 – 0.6 ppm for Total Ammonia (TAN), as annual means.



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