

# River Rangers Handbook

The volunteers protecting, monitoring, and conserving rivers throughout the Colne Catchment



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## Introduction to the Colne Valley Regional Park

The Colne Valley Regional Park covers more than 40 square miles and it is the first taste of countryside to the west of London. It is also part of London’s green belt, the lungs of the city. The Valley is a mosaic of farmland, woodland and water, with around 200 miles of rivers and canals, and more than 60 lakes. It is a living, working



Figure 1: Map of the Colne Valley Regional Park

environment, providing employment and homes for many people, as well as being a haven for wildlife.

The Colne Valley Regional Park was founded in 1965, with the Park's boundary stretching from Rickmansworth in the north to Stains and the Thames in the South, Uxbridge and Heathrow in the east, to Slough and Gerrards Cross in the west.

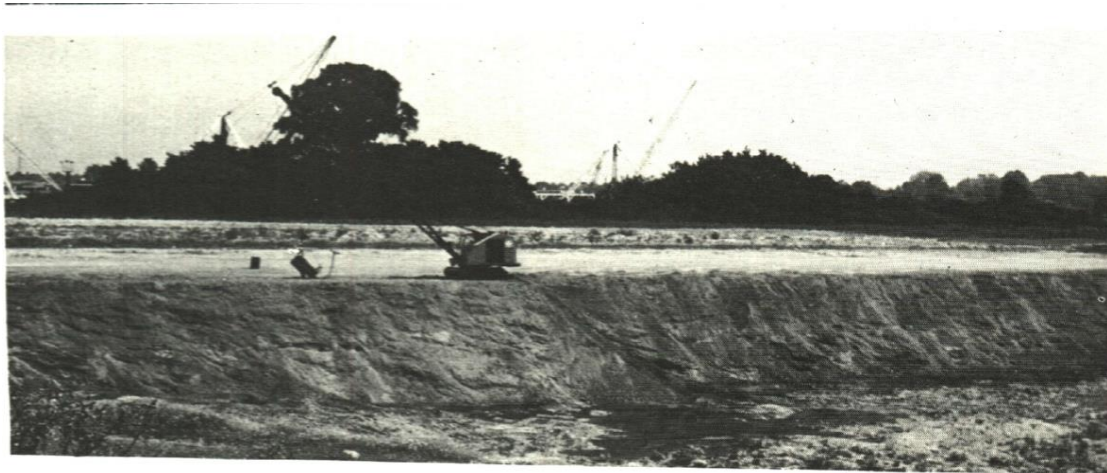


Figure 2. A gravel pit in the Colne Valley Regional Park

Historically, the Colne Valley comprised of a floodplain occupied by small farms scattered throughout the landscape. However, due to urbanisation and the industrial revolution, the river systems and land throughout the Valley have been utilised to serve the needs of the people. During the industrial revolution, there was huge growth in the number of watermills to meet the increasing demand for textiles, gunpowder and flour. The Grand Junction Canal was built, enabling a boom in industries such as copper works and gravel extraction that shaped the landscape you see today. Multiple motorways and public transport systems have and are still being built across the Colne Valley, driving destruction and deterioration of the surrounding area.



Figure 3. Purple Emperor Butterfly at Harmondsworth Moor



Figure 4. Snowdrops at Denham Country Park

## Introduction to the Colne Catchment

The catchment-based approach involves thinking of our rivers and surrounding landscapes as being defined by the natural state and flow of watercourses and the structure of the landscape, rather than by artificial boundaries. In the past, issues within rivers tended to be addressed simply within that river, however as all our watercourses are interconnected, problems may be being caused by issues upstream! For instance, an outfall upstream may be causing water pollution issues downstream in a different section of the river system. This is why a catchment-based approach is necessary, to better address problems within and around the aquatic environment in an effective way that solves issues for people and nature. The catchment-based approach is part of the Water Framework Directive (WFD), on which you can read more here.

The Colne catchment consists of 26 different water bodies, spans 1018km of land, and covers six different major rivers and their tributaries.

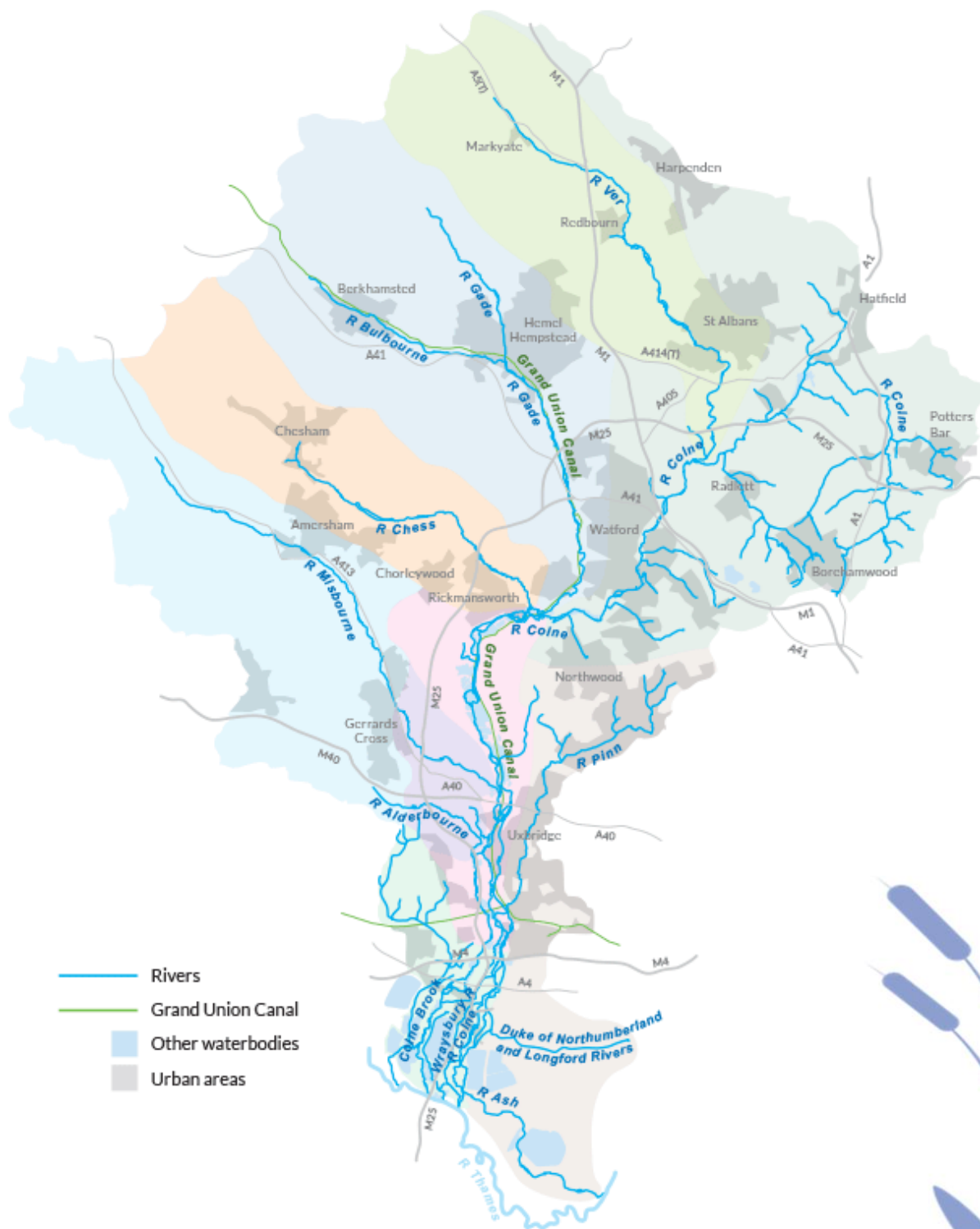


Figure 5: Map of the Colne Catchment

## Ecology in the Colne catchment

The Colne catchment encompasses a diverse range of habitats, from ancient woodlands to wildflower meadows and chalk streams. There are numerous sites with important designations, including 9 Special Protection Areas, part of one National Nature Reserve, 12 Sites of Special Scientific Interest, and 9 RAMSAR sites, highlighting the need for active conservation to preserve these iconic sites. The catchment also contains a variety of flora and fauna, ranging from common species such as rabbits and frogs, to more elusive ones such as grass snakes, the threatened water voles and the critically endangered European Eel.

## Current threats

Due to climate change, land use change and a variety of other human-driven stressors, our water systems, ecosystems and native biodiversity are highly threatened.

Climate change is already evident to be driving increasing average temperatures and increased intensity of extreme events, such as heatwaves, which has led to areas of the riverbed throughout the Colne catchment being dry for much of the year. Additionally, altered rainfall patterns driven by climate change can lead to an increase in flooding intensity, further damaging the surrounding landscapes, harming wildlife populations as well as threatening local communities.

Land use change is also driving deterioration of waterways and habitats throughout the Colne catchment, as well as exacerbating the impacts of climate change. Additionally, stressors key within the Colne Catchment includes the presence of many invasive species, which can out-compete local native wildlife, driving population declines of multiple species and habitat loss. Further to this, water quality is a prevalent worry, with increasing sewage discharge, nutrient runoff and pollution incidents occurring throughout the Colne waterways. Decreasing water quality can threaten native biodiversity and lead to population declines.

## Hope is not lost – but we need your help!

The River Rangers are a volunteer group of those local to the Colne catchment which focus on surveying, conserving and championing our local watercourses. They began as part of the Landscape Partnership scheme, funded from the Heritage Lottery, from 2019 – 2021, and have continued since. Our River Rangers are essential in recording the health of our river system, addressing its threats, raising awareness for our rivers and overall, sustainably managing the Colne catchment.



Figure 6: Picture of River Ranger Volunteers on a pile of the invasive Himalayan Balsam

Volunteering can make a real difference to management of current threats towards our environment. Every small bit of work done along and around our rivers is part of a bigger picture working towards conserving and restoring nature throughout the catchment and the UK. Monitoring initiatives help us understand the state of our rivers and coordinate action to protect them. Practical habitat management in rivers can then help support local wildlife populations, restore water quality and improve management of the effects of flooding; which is key in light of climate change. By



developing good strategies for monitoring and managing our aquatic habitats, we can then work with other catchments throughout the UK who are struggling with similar issues.



Figure 7: Pictures of volunteers at various locations.

Volunteering as a River Ranger not only benefits the environment and local communities – it also benefits your health and wellbeing. Time spent in nature has been shown to reduce stress and anxiety while improving concentration and attention. So you can help conserve our rivers and keep healthy at the same time.

As a river ranger you can volunteer on your own terms, when and where works for you. You do not need any experience or knowledge; we will train and fully support you throughout all activities you choose to help out with! There are a wide range of different opportunities for those who would like to volunteer, as well as social events and river walks. Additionally, feel free to contact us (details can be found at the end of the handbook) concerning anything you would like to see added to the schedule!

## How you can get involved

### Invasive Species Surveying and Management

Invasive species, which are typically defined as species not native to a given area that have some form of harmful environmental effect. Throughout the Colne catchment multiple invasive species are present and causing disruption and harm to the local environment, communities and the economy. Especially problematic species include floating pennywort, Himalayan Balsam, Giant Hogweed, Signal Crayfish and Skunk Cabbage.



Figure 8: Pictures of the invasive floating pennywort

You can get involved in helping monitor these species by reporting them anytime you see them in your local area by reporting them on the cvfc website. We have handbooks on how to identify these, so just pop us an email if you are interested. Additionally, we run monthly invasive species surveying courses, where we provide training for identifying invasive species and conducting surveys to support continued monitoring of invasive species throughout the Colne Catchment. By taking part in our invasive species training course, you can then take on a survey route of your own to monitor invasive species in your local river.



Figure 9: Pictures of bankside and in river invasive species surveys

We also run invasive species manual removal sessions, that will be advertised every month in our newsletter and on the Colne Valley Eventbrite. No training is required, we will be there on the day to show you what to do!



Figure 10: Pictures of volunteers conducting floating pennywort removal

## Water quality monitoring

We provide opportunities for volunteers to contribute to monitoring water quality by conducting surveys for pollution sources throughout the Colne Catchment.

## Riverfly Monitoring

The Anglers' Riverfly Monitoring Initiative (ARMI) is a Citizen Science initiative that trains volunteers to regularly monitor river water across the UK. Since 2007, it has collected data on river quality and riverfly populations enabling conservation of these environments. The valuable data collected by volunteers feeds into local knowledge and management schemes for organisations such as the Environment Agency.



Figure 11: Volunteers conducting Riverfly surveys

Trained volunteers regularly monitor freshwater sites for eight invertebrate groups. The information on invertebrate quantities found allows pollution to be detected and reported to local environmental bodies for a quick response. Currently there are numerous riverfly monitoring sites found across the Colne Valley Regional Park.



Figure 12: Volunteer conducting kick sampling and a picture of a Riverfly – specifically a Mayfly.

The aim of the River Rangers' project is to expand this monitoring throughout the lower Colne Valley, focusing on the River Colnebrook, River Colne, River Frays and River Wraysbury. As a Riverfly monitor you would need to commit 1-2 hours each month to survey your chosen site. Volunteers can choose from key Riverfly monitoring sites already identified, and will work in pairs while surveying for safety and enjoyment. If you are interested in becoming a riverfly monitor, please email [rivers.team@groundwork.org.uk](mailto:rivers.team@groundwork.org.uk) to find out more.



Figure 13: A demonstration of Riverfly identification by a riverbank

## Habitat Management and Practical Conservation Activities

We also run various habitat management and practical conservation activities, ranging from litter picking to clearing river channels of encroaching vegetation. All these are advertised in our mailing list.

### Contacts

[Rivers.team@groundwork.org.uk](mailto:Rivers.team@groundwork.org.uk) for all Rivers related queries, volunteer queries, to get involved in volunteer activities etc.

[Lara.Clements@groundwork.org.uk](mailto:Lara.Clements@groundwork.org.uk) for invasive species, Riverfly monitoring and River Ranger information and opportunities.

[Elaine.Brindley@groundwork.org.uk](mailto:Elaine.Brindley@groundwork.org.uk) for pollution monitoring and water quality information and opportunities.