



# This form should be printed out to take with you on your RiverSearch survey.

It includes help text that correspond with questions in the survey. Before you start your survey download a grid reference finder app onto your phone. In the field this will enable you to enter the location of your RiverSearch surveys.

Importance of the survey - The Wildlife Trust's Living Landscapes strategy focusses on improving river corridors to create more resilient wildlife populations that can move between suitable areas of habitat. The first step on the road to improving these corridors is understanding where to target management interventions, and where the biggest barriers are to wildlife movement.

Access to survey - Please do not enter private property to survey without the landowner's permission. This can be obtained by enquiring about land ownership from nearby houses and asking permission to undertake a survey. It is often easiest to observe the river from a bridge or footpath. Where footpaths cross rivers, this can provide a suitable place to sample the water.

# O Photos

Please take up to four photos to go with your survey data. One photo should be taken from the same place on each visit and should capture some parts of the waterbody and surroundings. Aim for a photo that captures the general character of that stretch. Other features where photos would be useful are highlighted with the camera icon.

# Survey details

An easy way of locating a good place to survey your river/ water is to use online maps. Bing maps has a very useful Ordnance Survey layer to locate places where footpaths or bridges cross the river and will provide either easy access, or a good view point at which to survey your river from. Further information can be found in your survey pack under "Monitoring Strategies".

# Q1. Location

Please enter a 10 figure grid reference of your survey point. If you are observing a stretch of river, enter the mid-point of the stretch.

#### Q2. Type of survey

Please choose whichever survey type suits you best. If you are observing a stretch, please indicate how long your observed stretch is (please note it is your responsibility to choose a survey location).

# Q3.Type of waterbody (select one)

A stream is classed as something you could jump over. If you are surveying either a Pond or Canal many of the questions won't be targeted towards this type of waterbody. However, please take a note of evidence of pollution, diffuse pollution, invasive species and wildlife spots!

# **Channel Observations**

# Q6a. - 6c. Dimensions

Do not enter the watercourse in order to gauge water depth. If you are unable to make a reasonable guess then don't worry!

# Q7. Water level

If this is your first survey in this area then you may not know previous water levels. River levels are regularly checked by a network of monitoring stations.

Simply enter a postcode at <u>www.flood-warning-informa-</u> <u>tion-service.gov.uk/river-and-sea-levels</u> and you will be given the nearest river levels for that location in the last 5 days. However, we hope that you will return to the same stretch numerous times to monitor change over time.

## Q9a. – 9e. Water quality observations

Once you have undertaken a few river surveys you will be able to move on to water quality testing if you so wish. We will lend you out a water quality testing kit which will comprise of the following:

-> Turbidity tube: This measures how murky the water is. Brown water is a sign of soil getting into the river. In areas of low flow the soil and sediment can settle out of the water and cover the stone and gravel beds which are vital habitats for many species.

-> Phosphate reader: Phosphorous is an essential element for plant life and it often applied to gardens and farms to improve plan growth. However, when it washes off into water, phosphate can cause plants and algae to grow too much which in turn can block out light to other species.

-> Ammonia reader: Ammonia occurs naturally in water bodies arising from the microbial decomposition of nitrogenous compounds in organic matter and is excreted by organisms. When ammonia is present at high levels in water, it is difficult for aquatic organisms to sufficiently excrete the compound, leading to toxic build up in their bodies which can lead to death. Environmental factors, such as pH and temperature, can affect ammonia toxicity to aquatic animals

-> Thermometer: Change in river water temperature can have important consequences for the environment and people. We would like to be able to monitor temperature change over time.

-> pH test strips: For a river to support a wide variety of wildlife, the pH of the water mustn't be too acidic or alkaline.

# Banks

#### Q10.

Measure the dominant bankside vegetation 1 - 2 m from the water's edge.

#### Q11. – Q12. Dominant Land Use within approx. 40m

Banksides (left and right) are as you look downriver. Ensure you only tick one box for each bank.

#### Q14. Barriers

A barrier in a river causes there to be a difference in water levels before and after the barrier. Think of a barrier as something fish would struggle to get past, either because there is a height difference between the upstream and downstream side of it, or because the river is being channelled through a pipe or culvert making it difficult for fish to swim against the flow or get into the culvert.

#### Keep a look out for the presence of the following:













#### Q15. Associated features

**Riffle:** Habitat feature characterised by shallow, fast-flowing, water with a distinctly disturbed surface over gravelpebble, or cobble, substrate.



**Eroding earth cliff(s):** Only record if 2m high or above. These features are used by birds such as kingfishers for nesting. They also indicate an actively eroding river and release gravels into the stream to recharge the riffles.



**Depositional bars:** In-channel bars are formed when sediment drops out of suspension in the water and builds up at various points in the channel. They create both fast and slow flows as water is forced around them providing suitable habitat for a whole range of species. Point Bars: Found on the inside edge of meanders. Mid channel bars: Found in the middle of the channel with water flowing either side

**Back Waters:** Redundant river channels that are connected to the main channel only at one point, normally the downstream end.

**Marginal Vegetation:** Marginal vegetation has its roots on a shallow bar under the water with leaves emerging above the surface. Some common examples include branched bur reed, bull rushes, common reed, reed sweet grass etc.



**Aquatic vegetation:** Aquatic vegetation grows in the water either with submerged or floating leaves. Examples include water lily, water crowfoot, starwort and water milfoil.

**Large Woody Debris:** LWD can be anything from whole tree trunks through to tree limbs that have settled within the river.

#### POLLUTION

# Remember, if you see any of the following, call the Environment Agency hotline

**on 0800 80 70 60:** pollution to water or land, damage or danger to the natural environment, dead fish or fish gasping for air, or collapsed river banks.

#### Q16. Evidence of pollution

Pollution is a key issue on our rivers and so recording signs of pollution is very important to the health of our rivers.

#### Dirty water from pipe or gully



**Sewage debris:** Evidence of sewage debris might include sanitary products, cotton buds and baby wipes.

**Unpleasant odour:** Rotten egg smells often relate to raw sewage, low oxygen levels, or the process of decomposition. Sharp smells can indicate agro-chemical input, and gassy smells suggest industrial sources, waste water or pollution from waste.

**Oily sheen:** Although there are natural sources of oil, a rainbow coloured sheen on a river can indicate that petro-leum or other oils have entered the water course.

**Sewage Fungus:** Sewage fungus is a build-up of a mass of filamentous bacteria. This is likely where there are misconnections in the sewage system. It is a sign of serious pollution.

#### Q17. Diffuse pollution

Field run-off: Soil is a major source of water pollution. Too much fine sediment causes siltation of fish spawning grounds, clog their gills and deprive them of vital oxygen. Soil also transports nutrients and chemicals to the river.

**Poaching from animal access to river (limited)...(extreme)...:** A poached soil is where there has been a physical breakdown of soil structure under load, in this instance animal hooves. Large scale poaching can lead to sediment input into the river.



**River bank slump:** The hooves of sheep, cows and horses cause the tops of banks to become unstable and begin to erode away. The close cropping of the grass also leaves the banks vulnerable to erosion, as there are no root structures to hold them together.



Dirty water from drainage ditches or small streams:



#### Q18. Invasive species

You are able to upload 8 photos on your Cartographer form. If you would like to send in more, please email them to Riversearch@surreywt.org.uk. Please reference your survey details so we can match the photos up with the survey.











**Japanese Knotweed** 

Crassula

Water fern





## Q19. Wildlife spotting

We are keen to know what wildlife you spot around the waterbody you survey. Often the health of a river can be indicated from the wildlife that use it – the more variety and abundance you spot, the more likely your river is healthy! As well as the categories on the RiverSearch form, we strongly encourage you to download our additional species spotting guide and record these using your Riversearch form or Surrey Biodiversity Information Centre's form.

If you see anything you are unsure about, take a photo and email it to us at citizenscience@surreywt.org.uk (reference: RiverSearch in the subject header) We will do our best to help you identify what you have seen.