

eDNA benchmarking FAQs

What additional information will eDNA benchmarking provide to our SmartRivers group?

It's a way of benchmarking diversity within your river or across individual sites for a wider range of organisms.

This tool will give information about the presence and absence of species across a range of 33 taxonomic groups from bacteria to birds, including key groups like fish and the various invertebrates you are already familiar with.

Please note: our eDNA tool is being offered alongside traditional SmartRivers invertebrate monitoring and will not be replacing it. It also doesn't provide information about population sizes of the different organisms.

What eDNA packages are available?

Package 1: Overview of diversity in your river

What's in your river

A smaller volume of water collected from five monitoring sites that is mixed and analysed as a single overarching river sample.

Package 2: Overview of diversity at each site in your river

What's in your river and where it is found

A larger volume of water collected individually from each monitoring site (this can be your existing invertebrate survey sites) and analysed separately, so results can be compared across sites. As more water (and eDNA) will be filtered per site, this package is likely to detect more species.

An example of the two packages in practice:

A river with fish species A, B, C, D, and E.

Package 1 = We found four species of fish (A, B, C, D)

Package 2 = We found five species of fish (A, B, C, D, and E). At site 1 we found species A, B and C. At site 2 we found species C, D, and E.

What costs are we looking at to apply eDNA benchmarking?

Package 1:
£492 + £30
postage

Package 2:
Number of
sites x £492 +
£45 postage

Figures are VAT inclusive. These costs include equipment and reporting. A box containing everything you need will be posted directly to you.

There is no long term commitment and we will be happy to discuss, on a case by case basis, what will work best for your group.

What does eDNA sampling entail?

Your kit box will include full instructions and advice. Online training support is also available directly from Trace Biomonitoring.

Each sample uses two duplicate filters – this improves the accuracy of your results. Overall, you need to collect 1.5 litres of water per filter from the river in a sampling bag.

Package 1: Sites are combined, so your 1.5l will be a mixture – your two sampling bags will each need 300ml from each site (no more than five sites).

Package 2: You will fill two sampling bags with 1.5 litres at each site.

For both packages, collect water from different spots across the site. Think of it like a kick sample spread across microhabitats. Avoid collecting from just one spot near the bank, as this will reduce the diversity of species detected.

Once collected, use the syringe from your kit to push the water through the filter. The water passes through and eDNA is captured on the filter.

Aim to push the full 1.5 litres through each filter. If the filter becomes hard to push (due to sediment), stop and record how much water you managed to filter.

Dry the filter by pushing air through the syringe, then add the preservative solution provided.

Each filter comes with its own bag and site details form. Fill these in carefully and keep them together. Just like labelling your SmartRivers sample buckets, mixing these up causes problems.

Once done, either post your samples back the same day or store them in a fridge overnight before posting.

How long does collection take?

Time at each site varies by package. Collecting and filtering the water for package 2 takes roughly the same time as a kick sample.

We strongly recommend working in pairs. Two people can collect water for both filters simultaneously, which saves time and means the second filter won't pick up extra sediment from water you've already waded through.

How do samples get to the lab?

Samples must be sent the same day or kept in the fridge and sent the following day.

Use the original box and returns label provided. You can find your nearest DHL drop off point [here](#). The chosen drop-off point must have the 'Account, prepaid online & pay in store shippers welcome' service available. If there is no drop-off point near you Trace can organise courier collection.

When and how often do we collect samples?

There is no hard and fast rule for sample collection timings.

In our pilot study we covered spring and autumn to align with traditional SmartRivers invertebrate monitoring and found some seasonal differences. But, a single collection will still provide valuable taxonomic knowledge. Trace staff will be available to advise on best practice regarding sample timing and environmental considerations.

We recommend you use eDNA as a one-off benchmarking tool. Annual repetition is not required but it could be revisited, for example as part of pre and post river intervention evaluation.

When can I expect results and what do they look like?

Data turnaround (from sample return to data visualisation) is set at 4 weeks.

Data will be hosted and presented on Trace's existing Shiny app. You will receive a link from us when it is ready. We're happy to go through the findings with you.

See a reporting example for [Package 1](#) and [Package 2](#).

Do we have to sample at our current SmartRivers locations?

There is certainly value in collecting eDNA samples at your existing sites to benchmark diversity. But there is no reason that the method couldn't be applied for wider exploration (e.g. locating presence of rare or invasive species) or monitoring impacts of other projects in the catchment.

Get in touch:

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