**“How to use” guide for the River Restoration Centre’s monitoring Protocol:**

**Key:**

* **Target/why –** What is the overall objective of the works which are to be monitored?
* **What –** What are you trying to observe from your monitoring? E.g. increased sinuosity and habitat heterogeneity through re-meandering and adding large wood / reduction in nutrient inputs by installing SuDS.
* **How –** What techniques are being used to collect data and what assessment methods are you using? E.g. electro-fishing monitoring diversity, abundance, density, length and age.
* **When –** When are you collecting data (month/season)? Duration/length of monitoring period, how many sampling repeats, how regularly?
* **Who –** Who is the individual and/or organisation responsible for monitoring? Will this be done by more than one organisation?
* **Data –** Do you have access to any pre-project data? E.g. monitoring data from the Environment Agency.
* **Cost –** Cost of monitoring. Are all costs in kind, or are there expenditures for e.g. external lab analysis.
* **Which WFD objective is this helping to achieve –** Which WFD quality element will be addressed by your works? If not WFD, does the work/undertaking aim to improve favourable conditions (for designated sites or species, e.g. SSSI/SAC/SPA/BAP) or does it relate to any other policy drivers (e.g. public engagement, socio-economics, flood management, ecosystem services)
* **Priority and confidence:**Priority: High/Medium/Low importance that your monitoring method can show potential improvement of the related WFD quality element; the favourable condition (i.e. designated site or species such as SSSI, SAC, SPA, BAP); and/or other policy drivers (e.g. socio-economics, flood management, ecosystem services).  
  Confidence: High/Medium/Low confidence that the monitoring is robust, suitable and has the potential to show what you are trying to observe within the CRF project time limit.
* **On target –** Are the monitoring tasks outlined running to schedule? If no, why not?

| **Target/Why**  What is the overall objective of the works which are to be monitored? | **What**  What are you trying to observe from your monitoring? | **How**  What methods are you going to use? | **When**  What periods over the year and how often? (to indicate variability)  And where if possible | **Who**  Who is going to do this? | **Data**  What existing data is available in addition to the monitoring being outlined here | **Cost**  (can be in kind) | **Which WFD quality element is this helping to achieve?**  **If not WFD specify (e.g. SSSI, SAC, BAP or other policy driver)** | **Priority**  High/medium/low linked to WFD or other designation | **On target**  Are the monitoring tasks outlined running to schedule?  (if no specify)  NOTE- can use RRC update questionnaires as a start. | **Key reporting tool and reporting output** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Confidence**  High/medium/low robustness of monitoring |
| **Will be different for each project – what is the project aim for the area being photographed?** | A visual change in (please specify) as a result of (please specify) | Fixed point photography – for methodology, refer to RRC’s Practical river monitoring guidance (2011)  X number of photos (state if known) & indicate if RRC have been provided with a map of points (Y/N) | E.g. Before, immediately after and post works recommended (state dates if known, e.g. month and year) | Project team/ Volunteers | State if fixed point photography or any anecdotal/ ad-hoc photography prior to CRF | Through project/  In-kind | State which of the following, the FPP demonstrates:  a) WFD targets,  b) designated river or  c) other e.g. social science targets | Priority: Please state (only grey if High) | Yes/ No | A time-series of fixed point photographs  State if any other analysis is being done |
| Confidence: Please state (only grey if High) |

* **Reporting tool and reporting output –** How will your collected monitoring data be recorded and the analysis outputs reported?

**Example of Fixed Point Photography:**

| **Target/Why**  What is the overall objective of the works which are to be monitored? | **What**  What are you trying to observe from your monitoring? | **How**  What methods are you going to use? | **When**  What periods over the year and how often? (to indicate variability)  And where if possible | **Who**  Who is going to do this? | **Data**  What existing data is available in addition to the monitoring being outlined here? | **Cost**  (can be in kind) | **Which WFD objective is this helping to achieve?**  If not WFD specify (e.g. SSSI, SAC, BAP or other policy driver) | **Priority**  High / medium / low must link to priority of project targets | **On target**  Are the monitoring tasks outlined running to schedule?  (if no specify)  NOTE- can use RRC update questionnaires as a start. | **Key reporting tool and reporting output** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Confidence**  High/medium/low robustness of monitoring |
| **Provide fish access around Beckfoot ford** | **Has replacement of pipes with an over-deep box culvert allowed gravel and migratory fish passage?** | Fixed point photography | Pre-works, during-works, immediately post and some time post-works, as a minimum. | Lune Rivers Trust | None | Through project/  In-kind | Improve, from moderate to good, the condition of WFD waterbodies:  GB112072071700  ease man-made barrier. | Priority: High | Yes | To be evaluated at end of the project in short report. To be carried out by project manager. |
| Confidence: High |
| Electrofishing | Post construction – no trout present upstream pre-construction | EA with LRT | 5-yearly Juvenile stock surveys | Priority: High | Electro-fishing of Beck post works required – although visual confirmation that fish now present  (Electro-fishing awaiting EA input) |
| Confidence: Medium (awaiting timings) |

**NB.** The EA determined the condition of these watercourses from water quality data collected at sites including those listed below.   
Further assessments are to be undertaken that will gauge the efficacy of the restoration projects undertaken.

**EA Surface Water Stations:** See <http://www.eea.europa.eu/themes/water/interactive/soe-wfd/wfd-river-basin-district-info-viewer>

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| **Waterbody** | **Station** | **Type** |
| Barbon Beck PTC River Lune | NWWIMS88003973 | Water Information Management System |
| D/S A683 bridge | NWNFPD8148 | National Fisheries Database |
| Cattle Barrier | NWNFPD11402 | National Fisheries Database |
| Barbon Beck – Barkin Beck | NWMORPGB112072071700 | Morphological |