

# Monitoring and evaluating your river restoration projects

This factsheet provides a short introduction to the following areas:

1. Why monitor and evaluate your projects?
2. Planning your monitoring and evaluation
3. Monitoring methods
4. Key monitoring principles
5. Finding support for your monitoring
6. Further information

## 1. Why monitor and evaluate your projects?

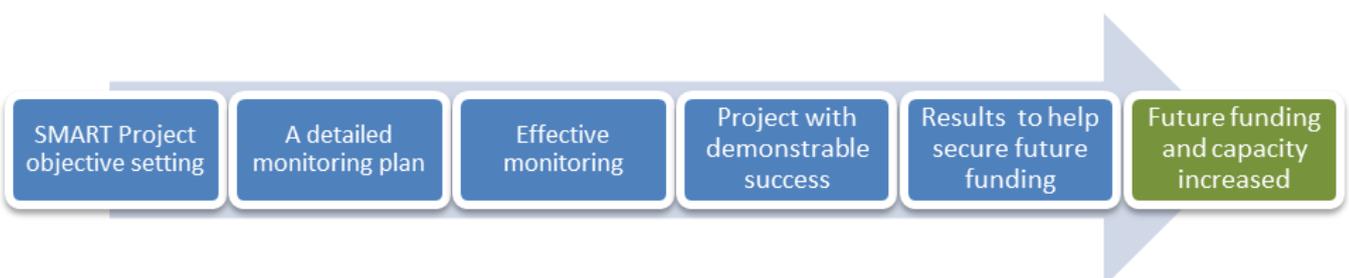
There are a number of key reasons as to why you should monitor and evaluate your restoration projects:

1. To demonstrate project outputs or successes to current funders and partners
2. To demonstrate project outputs or successes to future funders and partners
3. To allow an adaptive management approach and identify the need for further restoration works
4. To provide data towards the overall scientific understanding of the benefits of restoration

Monitoring and evaluation has a key role to play in the long term success of your organisation. If you are able to monitor and evaluate your projects, then you can demonstrate exactly how successful your past projects have been, encouraging confidence in your ability to deliver successful projects in the future.

## 2. Planning your monitoring and evaluation

Monitoring and evaluation needs to be a part of your initial project planning. Before you start, ensure you know your SMART project objectives, which define what your project will achieve and how. Then set your evaluation requirements - what information do you need to provide for your own use, or for others (funders, project partners etc.)? Monitoring should primarily be focused towards demonstrating that project objectives have been achieved. It can be tempting to monitor what is convenient or of personal interest, however this may well not produce the evidence you require to demonstrate success. Or it may be that you are trying to monitor more than is possible given the constraints of your project. To avoid such mishaps, the [monitoring planner](#) (see overleaf) should be used to help you plan your monitoring.



*The link between project objective setting, monitoring and evaluation to increasing future capacity.*



## Monitoring Planner

The monitoring planner is a simple but effective tool to help you form a project monitoring and evaluation strategy, providing a systematic approach by answering 10 important questions shown below for each project objective. The planner should be used at the project scoping stage, applied and revised throughout the project, and on into the evaluation period. It is a tried and tested tool, already used widely by different practitioners across the UK. You can download a blank [monitoring planner](#) from the RRC website.

<b>Why</b>	<b>Why are you doing the project, what are the project objectives?</b> These should be specific (e.g. to improve fish spawning and invertebrate suitability by increasing the area of riffles and clean gravel habitat by 80% over 2km of river). Your objectives may require revising as you work through the planner, particularly to ensure they are measurable.
<b>What</b>	<b>What is your monitoring objective/ what are you trying to observe?</b> One or more for each project objective. E.g. an increase the area of riffles and clean gravel habitats of 80% over 2km of river.
<b>How</b>	<b>How will you collect data and what assessment methods are you using?</b> E.g. habitat mapping, 3 min macro-invertebrate kick-sampling; $\alpha$ -diversity, PSI index.
<b>Data</b>	<b>Do you have any access to pre-project baseline data?</b> If so, what? If not, this needs to be collected. (E.g. previously collected 3 min macro-invertebrate kick-samples from two locations in autumn).
<b>When</b>	<b>When are you collecting data?</b> Month/season, duration of monitoring, sampling repeats? (E.g. habitat survey: pre survey 1 month before works; post survey 1 year after. Macro-invertebrates: pre survey spring and autumn samples 1 year before; post survey 1 and 3 years after both including a spring and an autumn sample).
<b>Who</b>	<b>Who is going to monitor data? Who is going to evaluate data?</b> E.g. habitat mapping in-house by Jo Smith; macro-invertebrate pre survey by consultant, post survey in-house by Jo Smith.
<b>Cost</b>	<b>How much will the monitoring AND evaluation cost?</b> Review the questions you have answered above to estimate costs. Include cost of staff time, equipment, etc. Can be in-kind. Further guidance on costing monitoring methods is available in RRC PRAGMO monitoring guidance (section 9). If funding is insufficient, prioritise and go back to 'how' and think about alternative techniques and methods.
<b>Confidence</b>	<b>How confident (H/M/L) are you that the monitoring is robust, suitable and has potential to show what you are trying to observe within the project time frame?</b> If your confidence is low, go back to 'how' and consider alternative monitoring techniques.
<b>Evaluation</b>	<b>How will your collected monitoring data be processed, analysed and reported?</b> E.g. By Jo Smith using standard protocols, as end of year reports, uploading information to the RiverWiki.

### Top tips for planning monitoring

1. Plan with project partners or other advisors who may be aware of useful baseline data sources, hold experience of using different methods, or be able to contribute towards costs and efforts.
2. View the completed examples of the monitoring planner available via the RRC website to understand how it is completed.
3. If you are unsure of any details, including the correct methods to use, contact the RRC or other advisory groups, who will be able to guide you to ensure your monitoring is as effective as possible.

### 3. Monitoring methods

Due to the wide ranging components of river restoration projects and funding streams, and therefore the wide range of project objectives, there is a diversity of monitoring methods and approaches which your project might need to deploy. See section 6 of this guide for sources of further information on different methods.

#### Fixed point photography

Fixed point photography (FPP) should always be carried out where there is likely to be a visible change, from before to after, over a period of time. This covers most projects (there are a few exceptions, such as misconnection campaigns). FPP is cheap, requires minimal experience or expertise, can be replicated by different 'visitors' to the site (including volunteers) and can effectively capture a wide variety of changes. View section A 8.1 of [RRC PRAGMO](#) monitoring guidance for more information.



Fixed point photography with pre, during and post photographs within a reach where restoration work was carried out.

### 4. Key monitoring principles

#### A. Monitor both the environment and wildlife

The restoration measures may result in the river form and habitats you designed, but the wildlife may take longer to colonise. Initial assessment of river processes, habitat composition and other environmental variables such as water quality will help identify if there are other pressures which may need addressing as well as the physical form. Ensure you consider your river and restoration scheme in the context of its setting and catchment. Benefits often extend wider than the river channel.

#### B. Follow a Before-After-Control-Impact design

Ensure you have sufficient baseline data and control sites. This will help you distinguish the effect of the restoration scheme from the general trends in the whole river of catchment. Don't forget that there may be data already collected and available which you can use as baseline data.

#### C. The scale of your monitoring

Monitoring should be conducted at the appropriate scale (spatial and time) For example, a scale that reflects the habitat needs of the wildlife you are interested in and at all of their life stages.

#### D. Adaptive management

Regular evaluation of your monitoring results will enable you to react to unanticipated effects and trends to ensure the success of your scheme.

#### E. Tell people

Share your results and experiences. You can make an important contribution to further understanding the success of restoration measures and monitoring methods. You can share your lessons learnt by adding monitoring information to the [RiverWiki](#), an online tool used for sharing information on river restoration projects across Europe.



## 5. Finding support for your monitoring

Despite its importance, securing funding for monitoring and evaluation can be difficult. We regularly hear of projects which have wanted to do monitoring but have not secured funding to do so. Here are some tips on how to increase your monitoring capacity:

### The 15% rule

It is advisable to allocate at least 15% of project budget to monitoring and evaluation.

### Language

The term monitoring can sound off-putting to some funders. So think about the language used when making applications. “Evaluation”, “learning” or “demonstrating success” may be more attractive. Review the language used in the funding brief and match this accordingly.

### Link with Universities

There are some great examples of projects and partnerships who have linked with local universities. Universities are often interested in the effectiveness of different methods. Dedicated help can be cost effectively secured through student projects.

### Citizen science

There may be aspect of your monitoring which can be completed by local volunteers. Community engagement may also be one of the project objectives you need to show. Involving volunteers also has wider social benefits and can attract alternative sources of funding. Although volunteer time is ‘free’ in principle, citizen science takes time to organise well, and volunteers will need some degree of training depending on what they are tasked with. Don’t forget your project staff time commitment.

## 6. Further information

This factsheet only provides an introduction to the subjects covered. Therefore we recommend having a look at the following sources of further information:

### [Monitoring Guidance \(PRAGMO\)](#)

Expands upon all of the information here, including further information on different monitoring methods that can be used. Available via the guidance pages of the RRC website.

### [Monitoring planner](#)

Described on page 2, the monitoring planner is a simple and effective way to plan your monitoring strategy. Available via the guidance pages of the RRC website.

### [CaBA Citizen Science & Volunteer Monitoring Guide](#)

A showcase of monitoring methods which involve volunteers. Case studies from across England providing examples of their application. Available from the CaBA website.

### [RiverWiki](#)

Using the advanced search option, search for projects which have used the techniques you are interested in. Available via the restoration projects pages of the RRC website.

### [Contact RRC](#)

If you need advice just ask! RRC will either support you, or put you in contact with the organisation or individual best placed to help.

**Monitoring and evaluation has a crucial role to play in the long term success of your organisation. Use the monitoring planner tool and the guidance and expertise available to ensure that you can show that your work delivers and is effective.**