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Measuring Success

With any river restoration and associated floodplain work there is a need to measure the success or failure of the scheme to demonstrate its environmental benefit. In order to quantify the degree of success or failure some form of monitoring needs to be undertaken. Collated data can then help to increase the knowledge base and identify what techniques, or suite of techniques, are most successful for a range of river types and project objectives. As a result, both future project uncertainty and risk of failure can be reduced.

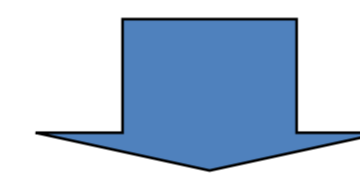


Effective Monitoring

River restoration monitoring needs to be able to demonstrate that project objectives have been achieved. The monitoring results can then be analysed to increase the evidence base for restoration schemes, help determine which techniques are most successful where and for which objectives.

SMART objectives should be set at the scoping (or preliminary) phase and these need to be appropriate for project aspirations. Objectives at this stage will help to define success criteria and provide a clear indication of financial and staff time commitment.

- **Specific** (concrete, detailed, well defined),
- **Measurable** (numbers, quantity, comparison),
- **Achievable** (feasible, actionable),
- **Realistic** (considering resources), and
- **Time-Bound** (a defined time line).





Example : Increasing in-channel habitat

Case: Opportunity to increase in-channel habitat in a lowland chalk catchment. There is space to create some backwater habitat, but for most of the river, current agricultural land use means that options are confined to in-channel habitat enhancement options. Creating a mosaic of habitats for fish, macro-invertebrate, macrophytes and marginal vegetation are all equally important.

Main targets:

- Create refuge areas for fish.
- Encourage development of classic chalk stream habitat.

SMART objectives:

- Excavate **2 backwaters** of **at least 2 m depth**, totaling **at least 50 m² in area**.
- **Increase variability** in channel **width and depth** by **reducing cross-sectional area** locally in **at least 8** locations, using **appropriate techniques** such as **brushwood mattresses**.
- **Increase the area of river bed covered by Ranunculus** spp.

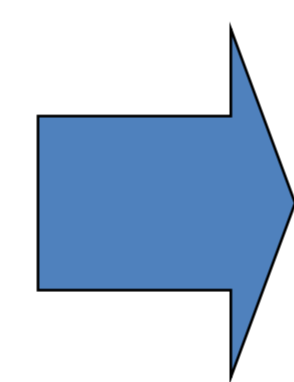
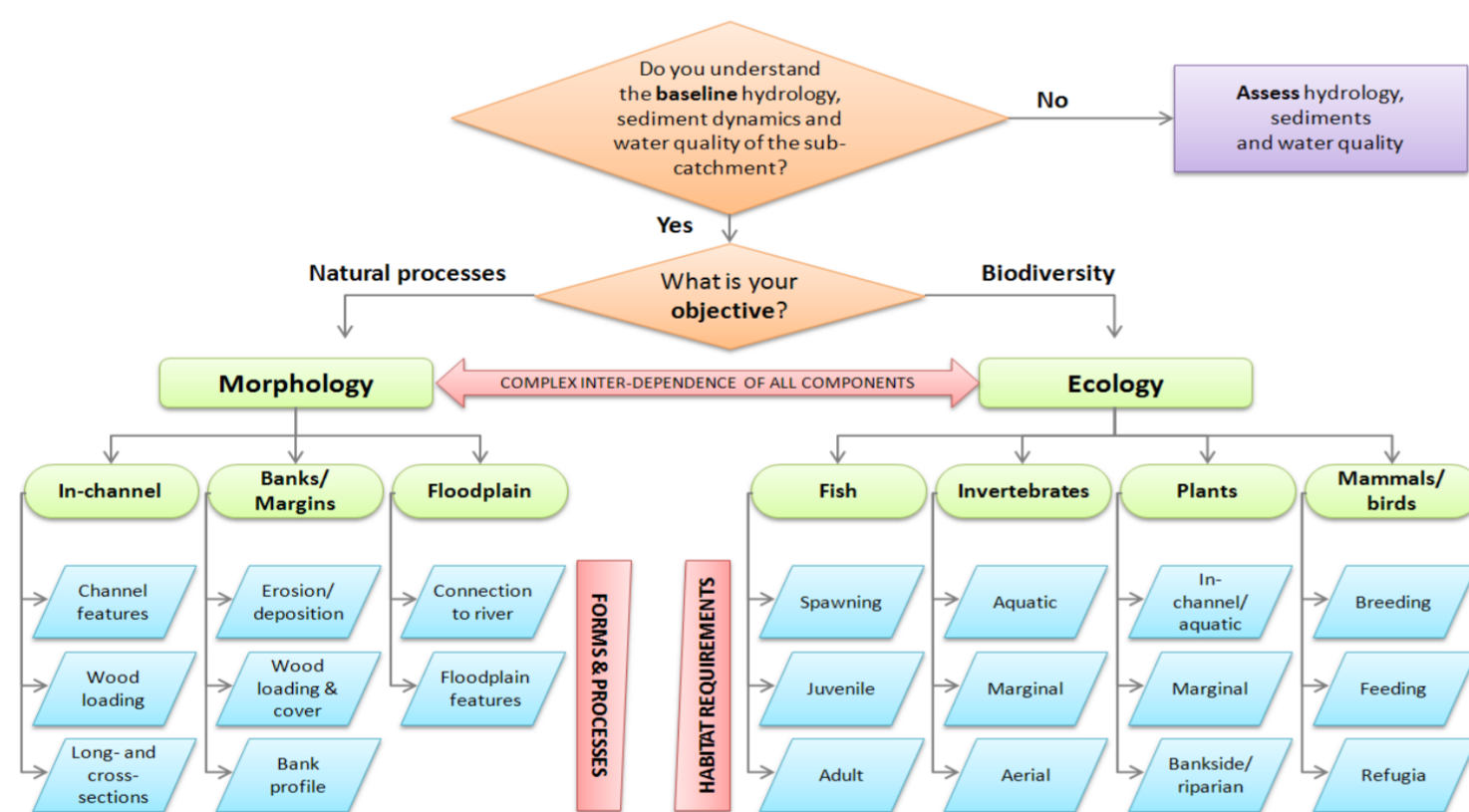
Specific

Measurable

Risk (of failure) Objectives to be achieved within **3 years**

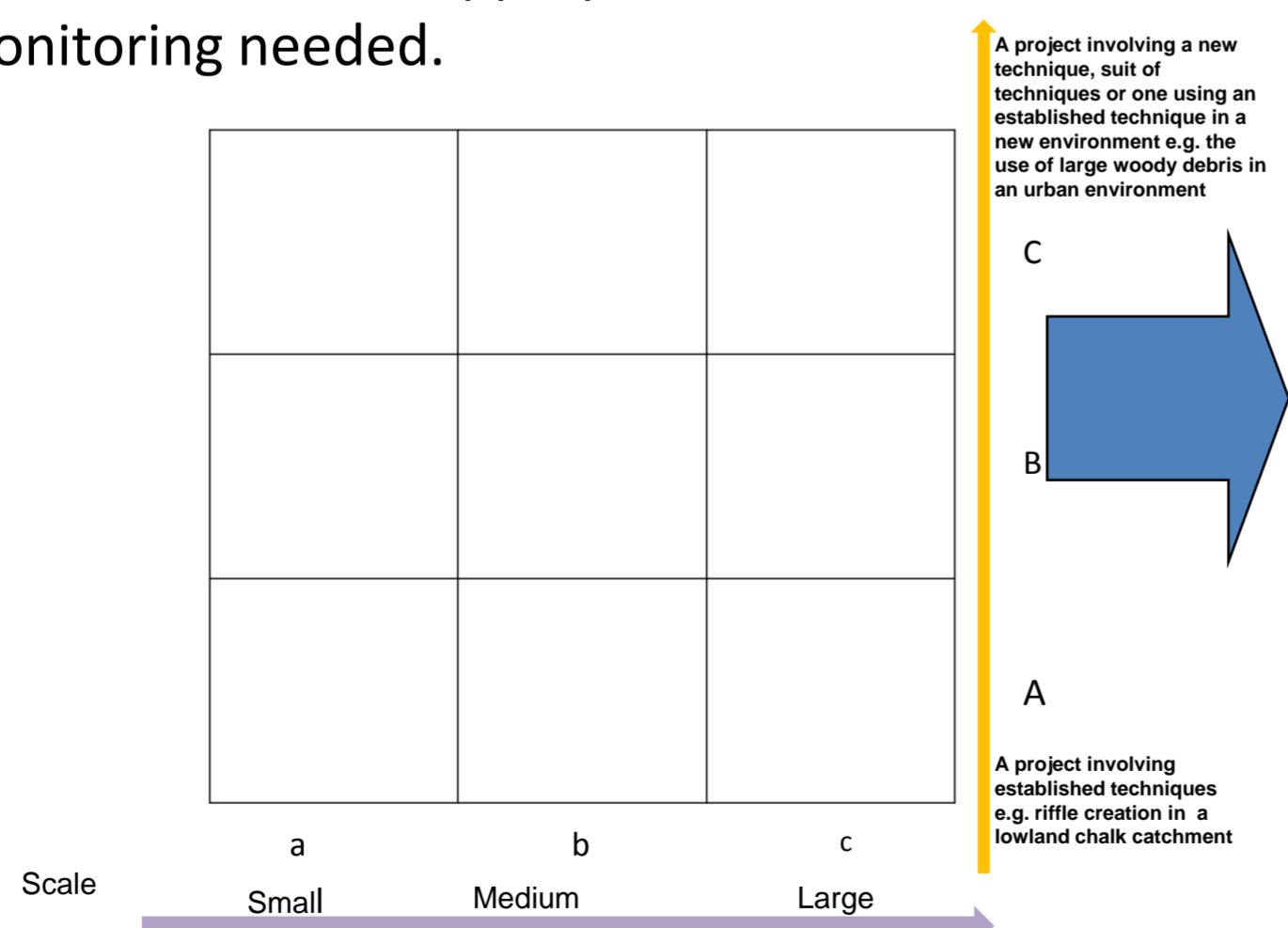
Linking hydromorphology to ecology

Projects can be considered either in terms of restoration of natural processes or improving biodiversity. The figure below, demonstrates these linkages and enables the user to think about what a project is setting out to achieve either from a natural process or biodiversity perspective. It ensures that both aspects are considered as part of the objective setting evaluation.



Evaluate Scale & Risk

The matrix and guidance can be used to evaluate the scale and risk of the project and determine the appropriate level of monitoring needed.



Select Monitoring technique

The guidance can be used to select the appropriate monitoring technique and develop a survey plan.



Review & Report

The final stage is to collate and review the results of the monitoring. The results can inform any adaptive management needed. The results will need to be reported and communicated and a copy to the River Restoration Centre to improve our information and evidence base.

