Outputs from a Monitoring Seminar

12th – 13th December 2006

The Forest Lodge Hotel, Lyndhurst, New Forest

'THE NEED FOR RIVER RESTORATION MONITORING TO ESTABLISH THE TRUE POTENTIAL (AND CONSTRAINTS) TO DELIVERING GOOD ECOLOGICAL STATUS'

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1. Executive Summary

Overview

Restoration is seen increasingly as a means of attaining ecological integrity and habitat heterogeneity in river systems. However, current evidence suggests that restoration schemes are poorly appraised on the basis of integrated ecological and fluvial geomorphology criterion. Understanding of the appropriateness of river restoration techniques for different river systems and project objectives therefore remains limited. Thus it is generally recognised that there is now a need to provide good integrated pre- and post-project appraisal and monitoring of river restoration efforts.

This seminar brought together people from a range of natural science disciplines and included academics, practitioners and consultants, with the aim of working towards agreeing a river restoration monitoring framework capable of providing guidance about the range of monitoring methodologies available and the level of monitoring needed for a given project size and set of objectives.

Key findings

It was agreed that developing an integrated monitoring approach that provides scientifically sound answers to a range of river restoration objectives is not a straight forward task. Methodologies within specific disciplines tend to vary and those chosen are often dependent on whether the monitoring is being designed from an academic point of view or where a more pragmatic approach is required/necessary. Furthermore, whilst there was some overlap between disciplines in terms of methods used, often different terminology, together with temporal and spatial differences in data collection mean that data interpretation can become problematic. This was emphasised by the results collected from pre-seminar questionnaires that clearly indicated that current monitoring generally uses industry standard methodologies. Yet, despite the collection of much quantitative data, through the use of these methods, our confidence about river restoration projects remains limited quite possibly because of the lack of an integrated approach to monitoring and the setting of clear project objectives.

The discussions led to a series of questions which included:

- Do existing techniques (and perhaps more specifically, how they are executed) need to be adapted to answer river restoration project objectives?
- How do we address the scale of monitoring? (i.e. do we want to know about catchment scale influences or local patch scale ecological and hydrological interactions?).
- Are there sufficient funds available to ensure monitoring outputs will increase confidence in river restoration technique success and applicability?

It was generally agreed that:

- Whilst there is still some way to go to achieve integrated monitoring, one way forward would be to ensure that a 'project coordinator' is included in any restoration project to steer research findings and ensure that project objectives remain central to the appraisal outputs.
- Restoration monitoring or adaptive management appraisal must be included as part of initial project costs.
- Sufficient budget should be provided to ensure that good analysis is carried out as well as the data collection.
- Both pre- and post-project appraisal and monitoring are essential if robust scientific conclusions about the success or failure of river restoration projects are to be achieved.

This discussion was an important aspect in agreeing a way forward for developing a monitoring framework to help guide people towards carrying out 'best practice' monitoring. The seminar provided the first steps towards developing this concept and provided a good way of bringing together people who were committed to forwarding the idea of implementing an industry standard 'handbook' (perhaps similar to the fluvial geomorphology handbook, for example) for monitoring river restoration projects.

Part of the ethos of the framework was to try to determine the level of monitoring that should be applied to projects and what percentage of overall cost should be used for data collection and analysis. Views on this varied between delegates with suggestions ranging from between 5-40% of the total project budget being allocated to monitoring which demonstrates some of the difficulty in balancing academic-based detailed monitoring with the more pragmatic consultant's approach. Many delegates did however feel that there was value in ensuring that, in the case of small, low cost projects, there should be a higher percentage of the overall cost (in the region of 20% of the total project budget) dedicated to the project appraisal, since low cost projects often provide an opportunity to cost effectively answer project success and management questions.

The need to test the scientific rigour of integrated monitoring and restoration techniques led to the conclusion that funding was urgently required for a large scale integrated catchment research project(s) geared towards testing a monitoring protocol specifically designed for evaluating river restoration techniques.

Overall, the seminar provided a good starting point for considering the way forward to designing an integrated monitoring protocol. It clearly identified the need to pull together a team of interested parties to deliver this and the need to also embark on a research and development programme to determine best practice river restoration.