

Use green engineering techniques instead of hard bank protection

Project Summary

Title: River Cam soft revetment project

Location: Cambridge, Cambridgeshire, England

Technique: Installation of coir roll bank protection

Cost of technique: £££

Overall cost of scheme: £££

Benefits: ££££

Dates: 2009-2011 (initial project)

Mitigation Measure(s)

Use green engineering techniques instead of hard bank protection

Preserve and where possible enhance ecological value of marginal aquatic habitat, banks and riparian zone

How it was delivered

Delivered by: Cam Conservators

Partners: Environment Agency



The banks of the River Cam with soft revetment works.
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Background / Issues

The River Cam has been managed by the Cam Conservators since 1702. Navigation by rowers, punts and other craft is extremely popular in and around Cambridge leading to high volumes of river traffic, which coupled with high river flows in times of flood has led to erosion of the riverbank. On top of the river bank is a heavily used footpath and cycle route, which also provides angling access.

A lack of marginal habitat in this heavily used water body is contributing to the current moderate ecological potential.



Eroding riverbank with no marginal vegetation, prior to soft revetment works

Step-by-step

Feasibility/planning

The Cam Conservators trialled a soft engineering solution to the erosion issue in 2009, which was very successful. They then identified the priority areas that would benefit from this method of protection. A water vole survey was undertaken prior to implementation to ensure there would be no adverse impacts on this protected species. Land Drainage Consent was obtained.

Implementation

The project used coir rolls pre-planted with native species to provide a soft engineering solution to the erosion issue, with the area behind the rolls seeded with native grass mix.

The original line of the bank was identified and marked with survey posts. Geotextile matting was attached to the wooden stakes and coir rolls placed behind. The remaining gap was infilled with soil to re-establish the bank. Native species grass seed was used to further enhance the biodiversity value whilst still preventing erosion of the bank during high flows.

Once established the coir rolls will lead to the development of a marginal vegetation fringe which will provide habitat for fish and invertebrates as well as protecting the toe of the bank from erosion.



(1) Survey line for position of retaining posts for coir rolls. Shows extent of erosion and lack of marginal vegetation;
(2) Pile driving posts

Benefits

- Increase in marginal habitat for fish and macro-invertebrates.
- Reduction in diffuse pollution as less silt input from erosion.
- Protection and enhancement of well used public access.
- Aesthetic improvement for all users with native macrophytes.
- Improved habitat for water voles.



Infill behind pre-planted coir rolls

Lessons Learnt

- Trialling the method first meant that there was confidence that the soft engineering option would provide the necessary standard of bank protection in this area.

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