

Use green engineering techniques instead of hard bank protection

Project Summary

Title: Bioengineered bank protection

Technique: Regrading and planting of bank slope

Location: River Severn, Longney, Gloucestershire, England

Technique: Regrading of bank slope and planting

Cost of technique: £££

Overall cost of scheme: £££

Benefits: ££

Dates: 1997

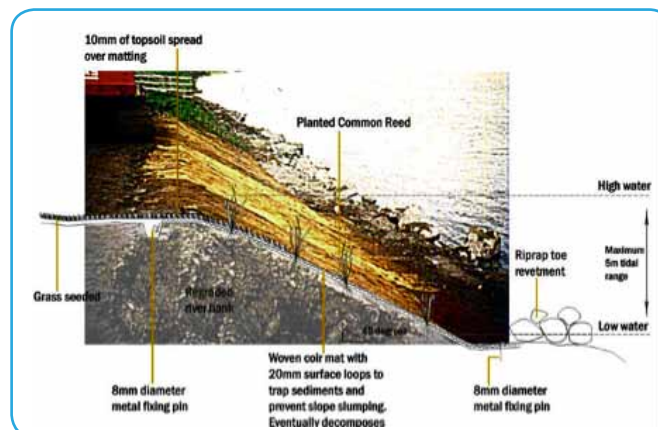
Mitigation Measure(s)

Use green engineering techniques instead of hard bank protection

How it was delivered

Delivered by: Environment Agency

Partners: Local riparian landowners



Schematic for installation of loop mat planted with pre-grown common reed

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Background / Issues & Step-by-step

The bank of the River Severn at Longney was experiencing considerable erosion due to the erosive forces of the Severn Bore. The banks were characterised by a localised lack of vegetation (unlike adjacent areas), making them particularly vulnerable to erosion. While subject to fast tidal currents, the site presents good conditions for vegetation establishment (if initially assisted to take root). Therefore, an approach aimed at stabilising substrate for long enough to allow strong estuarine species such as common reed or sea aster to become established was adopted. The solution included:

- The installation of anchored biodegradable erosion control matting in the form of three-dimensional woven coir mats with an initial 9 kN tensile strength. This was applied to the re-profiled slope and anchored top and bottom.
- The original riprap toe revetment was retained to provide underlying stability, but the main slope was completely bioengineered.
- Locally collected cCommon reed rhizomes were planted through the matting.



Eroding banks at Longney

Benefits & Lessons Learnt

- The common reed established well, continuing to provide stability to the substrate after the decomposition of the coir matting.
- Localised erosion caused by fast flows was greatly diminished, due to substantial decrease in near bank flow speed.
- The design was considered to be highly successful, cost-effective and appropriate to the location.

Project contact: Flood and Coastal Risk Management, Severn Team, South West Region, Environment Agency