Reduce erosion caused by land drainage

**Project Summary**

**Title:** Greener surface water outfalls  
**Location:** Anywhere  
**Technique:** Greener surface water outfalls  
**Cost of technique:** £  
**Overall cost of scheme:** £  
**Benefits:** ££  
**Dates:** Any

**Mitigation Measure(s)**
Reduce erosion caused by land drainage

**How it was delivered**
Delivered by: Riparian owners  
Partners: Partners relevant to watercourse in question

When not designed sensitively, surface water outfall pipes which discharge into watercourses can:

- Cause bed and bank erosion.  
- Disrupt the connectivity of a river corridor.  
- Destroy river bank habitat.  
- Discharge pollutants.

It is possible to design outfalls so that they blend in with the local environment and minimise their impact on the water environment. Outfall design should follow the principles set out (see image 1). However, the materials used in outfall design can be altered to suit the site and provide greater amenity and habitat benefit. Images 2 and 3 are examples where an outfall has been encapsulated within a river bank using geotextiles and minimising its environmental and aesthetic impact.

Where flow control structures are causing bed or bank erosion, erosion control mechanisms can be retrofitted. Outfalls can include a geotextile mattress to dissipate flow and prevent erosion and scour. However, any erosion control methods should start with the principle of using natural materials if possible. Reed beds can be planted next to outfalls to control erosion, create habitat and improve water quality. The rate of flow from the outfall should as far as is possible be controlled to the rate of drainage from an undeveloped greenfield site in order to minimise erosion locally and reduce flood risk.
CASE STUDY

Benefits & Lessons Learnt

- Preserves riparian habitat.
- Reduces bed and bank erosion.
- Helps manage sediment by trapping runoff and resucing its input to a watercourse.
- Can improve water quality by intercepting point source pollution.

Project contact: Partnerships & Strategic Overview Teams, Environment Agency,