9 ENHANCING OUTFALLS TO RIVERS

9.2 Reedbed at Raglan Stream

RIVER COLE

LOCATION – Coleshill, Oxon/Wilts border, SU 234935
DATE OF CONSTRUCTION – Autumn 1995 – Spring 1996
AREA – 640m²
COST – £500

Planting reedbed – Spring 1996

DESCRIPTION

A new reedbed was formed in a redundant length of the Cole following the river's diversion to restore a smaller meandering course *(see 1.2)*. An adjacent small tributary stream, the Raglan Stream, was diverted to flow through the reedbed before entering the river.

The aim was to create a small buffer zone to help intercept silts contaminated with agricultural pollutants and to add habitat diversity to the river. The likely effectiveness of the reedbed as a buffer zone was considered to be low due to its small size and to its location, where river floods would frequently wash over it. The habitat potential was however high, and the marginal costs of construction small, so the reedbed was considered worthwhile and would demonstrate a useful river restoration technique.

DESIGN

The new river course *(fig. 9.2.1)* was excavated near parallel to the old, and the latter partially infilled to create a flat area elevated about 500mm above the new river bed. The two were separated by a ridge of hard gravelly clay soil about 800mm above river bed.

The flat area was then contoured in a series of longitudinal furrows to hold ponded water between ridges of wet, but not saturated ground *(fig. 9.2.2)*.

The Raglan Stream was diverted to feed water into the furrows, but because the stream dries up in the summer a supplementary feed of water was diverted from the River Cole. The river flows into the

reedbed through a 150mm diameter plastic pipe that discharges through a 90 degree bend which can be swivelled vertically to cut off the flow or reduce it, as required, to keep the reedbed wet but not flooded. This level of control was only critical during the establishment period of the reed.

Common reeds were introduced in spring 1996 using pot grown seedlings along one side of each furrow and seed along the opposite side *(fig. 9.2.3)*. The use of two methods increased the likelihood of successful establishment and enabled the performance of each to be monitored.

Figure 9.2.3
DETAIL OF REED FURROW

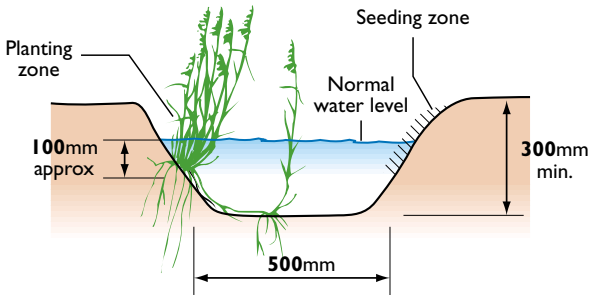


Figure 9.2.1
PLAN OF REEDBED

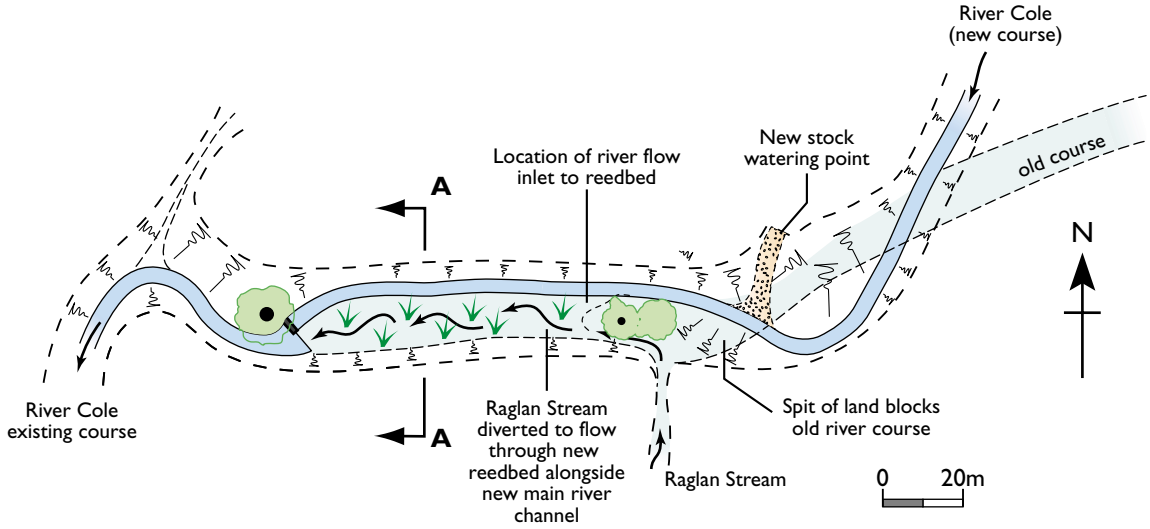
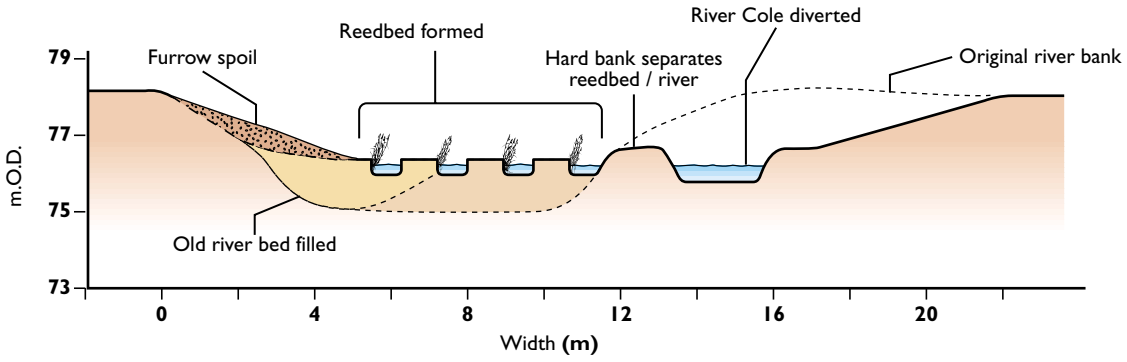


Figure 9.2.2
SECTION A – A



Reedbed established – Summer 1998

SUBSEQUENT PERFORMANCE 1995/98

The reedbed established exceptionally well with 93% of seedlings surviving to maturity, although seed germination was perhaps only 50%, but still sufficient to achieve full colonisation within two growing seasons. Other aquatic species colonised the area naturally, including greater water plantain and soft rush. Concerns that the River Cole might damage the reedbed when in flood proved unfounded because the overall size of the new river and adjacent reedbed is much greater than the exisitng cross-section downstream so flood flow velocities are low.

These hydraulic conditions may lead to progressive siltation of the reedbed in the longer term, but for the foreseeable future a valuable habitat has been created that additionally provides a buffer against contaminated silts from the Raglan Stream reaching the Cole.