

Allow the river to flood its floodplain

Project Summary

Title: Long Eau (Great Eau) Floodplain Reconnection

Technique: Bank reprofiling and flood bank set back

Location: Manby and Little Carlton (Long Eau) and Withern (Great Eau), Lincolnshire, England

Cost of technique: £££

Overall cost of scheme: £££

Benefits: ££££

Dates: May – June 1995

Mitigation Measure(s)

Allow the river to flood its floodplain

Increase of in-channel morphological diversity

How it was delivered

Delivered through: Environment Agency

Partners: Gainsborough Internal Drainage Board

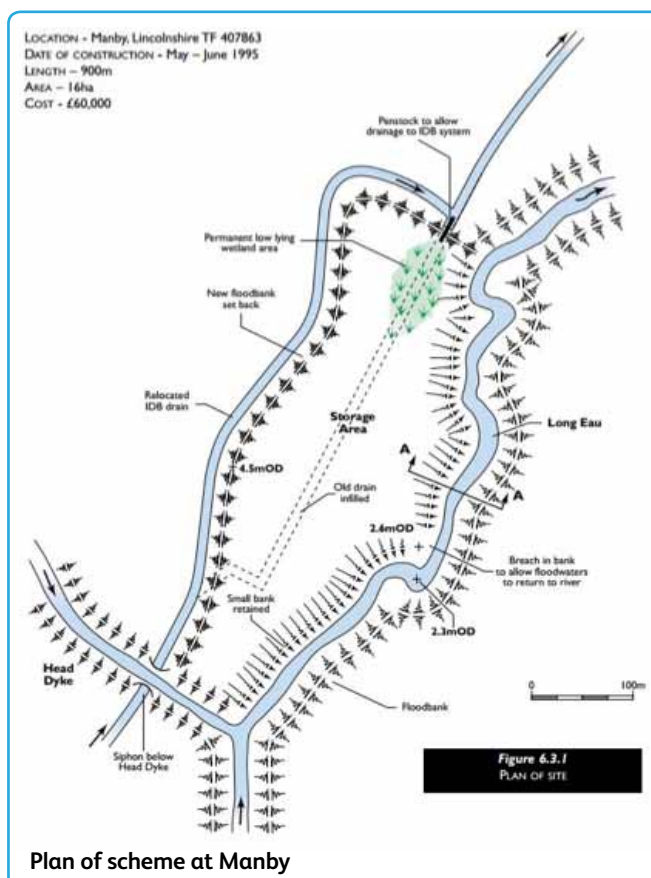


Background / Issues

The Long Eau, a tributary of the Great Eau, and the Great Eau (total catchment area of 112km²) have both become largely disconnected from their floodplains due to embanking and channelisation of the water courses to protect adjacent agricultural land from flooding.

The steeply sloped flood banks along with dredging and removal of bankside vegetation as part of the maintenance regime further contributed to the diminishing quality of in-channel habitats, the structure and substrate of the river bed and the overall morphological condition of these water bodies.

A restoration scheme was implemented at three sites (Manby and Little Carlton on the Long Eau, and Withern on the Great Eau) with the aim of restoring floodplain connectivity while improving flood protection standards through a process of relocating flood banks. In addition, the scheme aimed to combine floodplain restoration with river channel enhancement and marginal habitat creation.



Step-by-step

The restoration of connectivity to 16ha of floodplain included:

- 1) At each site the flood bank was removed and reprofiled to encourage overtopping of the banks, and a flood storage area was created on adjacent land.
- 2) Marginal berms were constructed at the base of each reprofiled bank (approximately 1m in width) to aid marginal vegetation establishment.
- 3) In the Long Eau at Manby, the left flood bank was lowered to just above ground level. The floodplain in the adjacent field was widened and flattened to act as an overspill area (1 in 10 slope). Material generated from embankment removal was used to infill the Internal Drainage Board drain which ran through the flood storage area at Manby.
- 4) Relocation of the drain behind the new embankment at Manby to maintain land drainage.

- 5) Creation of new embankments to a height of 2.5-2.7m (slopes were 3:1 at all sites). In addition, ledges and berms were created along the channel to increased habitat potential.



- (1) Relocation of IDB drain and flood bank set-back;
(2) Removal of flood bank and marginal berm creation.

Benefits

- Creation of valuable wetland habitat. Waterfowl and waders numbers have increased on the floodplain. Also, lapwing and redshank have bred on the Manby site. Flocks of over 60 redshank and snipe, curlew, ruff, common and green sandpiper are amongst the birds that use the washlands in the winter. Also, lapwing and redshank have bred on the Manby site.
- Increase in flood protection as water spills onto the reconnected floodplain when water levels in the channel reach 2.6m or above. Below this level, 75 % of the floodplain will retain water up to 0.5m for up to 4 months.
- Increase of 30 years to the standard of protection over a 3km stretch of the Long Eau at Little Carlton and at Manby.



Floodplain with permanent wetland area

Lessons Learnt

- Financial mitigation was instrumental in securing landowner support and ensuring project success. This was achieved through the successful entry of landowners into the Countryside Stewardship scheme.
- Consultation with the local Internal Drainage Board enabled local stakeholders to gain a greater understanding of the need for the works, and the potential ecological benefits associated with the works.
- Monitoring of the site has detected increased numbers of wildfowl using the catchment area.

Project contact: Flood & Coastal Risk Management, Anglian Region, Environment Agency