

Minimise disturbance to channel bed and banks

Project Summary

Title: River Nar rehabilitation strategy

Location: Lexham, Castle Acre and Narborough, North Norfolk, England

Technique: Bank reprofiling

Cost of technique: ££££

Overall cost of scheme: ££££

Benefits: ££

Dates: February – March 2011

Mitigation Measure(s)

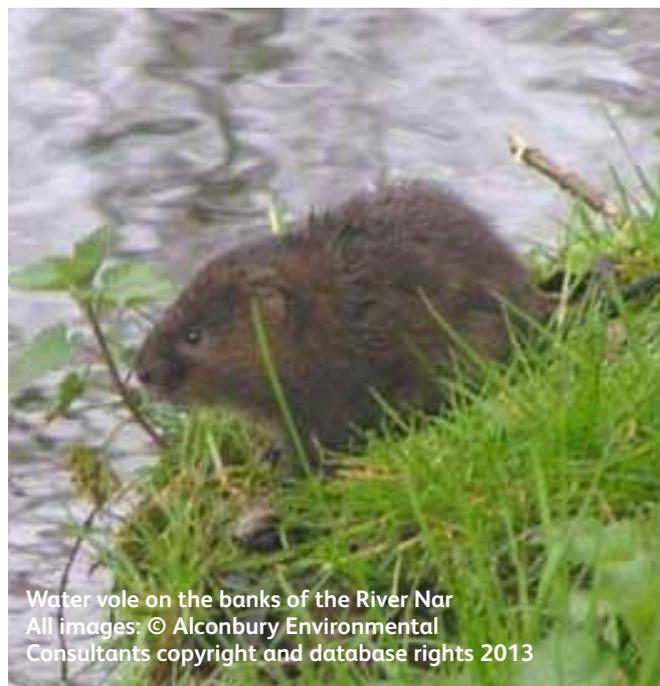
Minimise disturbance to channel beds and banks

Improve channel geomorphology to create habitat

How it was delivered

Delivered by: Norfolk Rivers Trust

Partners: Norfolk County Council; Alconbury Environmental Consultants



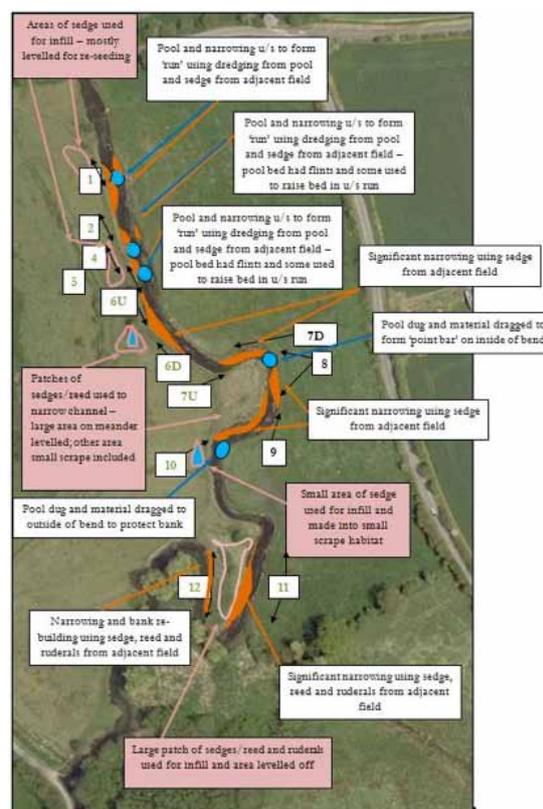
Background / Issues

The River Nar has been the subject of prolonged management which included substantial impoundment and straightening of river sections, resulting in the loss of in-channel habitat quality and diversity.

Restoration efforts undertaken in 2011 aimed to:

- Restore a natural flow and sediment regime through the removal of in-channel barriers.
- Increase morphological diversity through the installation of deflectors, vegetated berms and selective narrowing of the channel.

Water voles are a Protected Species under the Wildlife & Countryside Act and it is an offence to damage or destroy their habitat. The River Nar has been extensively surveyed and is known for a high water vole population. Given the high likelihood of the presence of water voles at the restoration site, a working protocol was established to ensure works could be progressed without impacting these animals and their habitats. This strategy aimed to minimise disturbance to the banks without compromising the delivery of ecological benefits through river restoration initiatives.



Details of proposed works at Castle Acre, River Nar
Source: Alconbury Environmental Consultants

Step-by-step

The delivery of the River Nar rehabilitation strategy and water vole protection working protocol has included the implementation of a number of mitigation measures aimed at minimising disturbance to the river bed and banks, including:

- Restriction of machine movement. Machines were never allowed to encroach within 1m of the top of the bank.
- No reprofiling of earth banks. Exceptions were only considered following on-site confirmation from Natural England that no water voles are present.
- Placing of dredged materials along the channel margin, leaving a gap of approximately 10 cm between the inside edges of the existing bank and material deposited in the river, in order to avoid damaging existing bank habitats.
- Where narrowing of the channel with dredged material was undertaken to create deflector “shoulders” or ledges and there is no gap between the dredged

material and the bank (this is prime water vole habitat) spades or the back of the excavator bucket were used to reinstate it.

- Ensure that no compression of the bank toe occurred by not compressing deflector posts into the bed if within 30 cm of the bank.



Construction of deflectors using dredged material

Benefits

- The scheme delivered significant improvements to the quality and range of in-channel habitats. These included improvements to local hydrology and morphology, contributing towards re-naturalisation of the flow and sediment regimes.
- Existing marginal habitats were protected during the construction works, safeguarding water voles and their habitat.



Creation of gap between banks and newly deposited dredged material

Lessons Learnt

- Water vole populations are present in many fluvial and transitional watercourses. This project demonstrates that it is possible to undertake restoration works which deliver geomorphological and ecological benefits without compromising the quality of water vole habitat.

Project contact: River Nar Restoration Team, Norfolk Rivers Trust